

Revision of the World Genera of Tribe Stigmini (Hymenoptera: Apoidea: Crabronidae: Pemphredoninae), Part 2. Species of *Incastigmus* Finnamore

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Abstract.—*Incastigmus* is a Neotropical genus previously known from 2 species. In this paper 21 species of *Incastigmus* are described as new: *aylaxiter* (Argentina, Bolivia, Brazil), *caelukhus* (Peru), *cearaensis* (Brazil), *ceromus* (Peru), *chuncha* (Ecuador, Venezuela), *ictericornis* (Argentina, Paraguay, Bolivia, Brazil, Peru, Ecuador), *ignithorax* (Costa Rica, Panama), *iphis* (Brazil, Paraguay, Bolivia, Peru), *kunkopteryx* (Brazil, Bolivia, Peru, Ecuador, Colombia), *mauracis* (Brazil, Bolivia, Peru, Ecuador), *mystaxalbus* (Mexico, Guatemala, Honduras, El Salvador, Costa Rica), *mytior* (Brazil, Bolivia, Ecuador, Colombia, Venezuela), *paranicus* (Argentina, Bolivia, Brazil), *prophorodontis* (Brazil, Bolivia, Ecuador, Colombia, Panama, Venezuela, Trinidad and Tobago), *pycnoglypticus* (Brazil), *pyrrhopyxis* (Peru, Ecuador, Colombia, Costa Rica, Trinidad and Tobago), *strepsilineatus* (Venezuela), *sunicerus* (Brazil), *trichodocerus* (Brazil, Paraguay, Peru, Ecuador, Colombia, Venezuela, Suriname, Trinidad and Tobago), *urqicus* (Brazil) and *zephyrus* (Mexico, Guatemala, Nicaragua, Costa Rica, Panama). *Stigmus hexagonalis* Fox (Colombia, Ecuador, Peru, Brazil) and *S. neotropicus* Kohl (Texas to Argentina) **new combinations**, are transferred to *Incastigmus*. Additionally, a key is provided to all species.

The genus *Incastigmus*, with 25 currently recognized species, was described to define a lineage of Neotropical Stigmini based on a phylogenetic analysis of the world taxa (Finnamore 1995). Its specimens are the most common Neotropical Stigmini in museum collections. The genus ranges from southern Texas to Argentina, but is not known north of the Lesser Antilles in the Caribbean, or from Chile. Nothing is known of the biology and behaviour of *Incastigmus*, but it is likely that all species construct nests in twigs and provision with aphids, as do most species in related genera. Several species in related genera nest in pre-existing cavities and some morphological and anecdotal evidence suggests *Parastigmus* species may be sand-nesting (Finnamore 1995). The title of the present paper reflects recent changes to the classification of apoid wasp lineages which, among other things, placed

the Pemphredoninae in the family Crabronidae (Melo 1999).

METHODS

Terminology generally follows Bohart and Menke (1976), but in some cases needs clarification. Morphological terms are listed below:

Appressed setae: setae forming an angle close to 0° with the body surface.

Lateral Sphere of propodeum: convex area of propodeum between propodeal enclosure and side (Gittins 1969).

LOD: maximum diameter of lateral ocellus.

Mesosoma: the thorax plus the propodeum.

Metasoma: the apparent abdomen consisting of the abdomen excluding the first segment or propodeum.

Micropore field: a grouping of minute pores usually visible only with scanning

electron microscope, but by stereomicroscope with diffusing filter apparent as a discrete microsculpture patch or line on upper frons, usually between the lateral ocellus and the eye.

Microsculpture: minute sculpture imparting a dull appearance to the body.

OOD: ocellocular distance, the least distance between lateral ocellus and eye.

Preomalar area: area of mesopleuron anterior to omarus (= preomalar area of Bohart and Menke (1976)).

Transverse groove: on pronotal dorsum, the transverse groove immediately posterior to the transverse carina.

Descriptions of all included species are provided based on the material examined. In species demonstrating variability, descriptions are based on representatives of the most prevalent phenotype with variation noted throughout the description. Collection data for the holotypes are presented as they appear on the label; thus several spellings for the same locality and collectors, and several formats for date of collection may be encountered. Collection data for paratypes are presented in a standard format of descending political units. Square brackets [] are used to indicate misspelling of localities, inability to confirm placement of a locality within a political unit, or when two or more localities with identical spelling exist within a political unit and the label data was insufficient to indicate which was intended (e.g., PERU: Ucayali: [San Pedro]—any of 4 localities named San Pedro within Ucayali Department, 47 localities within Peru). For previously described species only the collection localities and museums are listed.

The 2,043 specimens examined during this study were obtained from the following 31 institutions (the abbreviation preceding the institution is that used in the text to designate repositories):

AEIC—American Entomological Institute, Gainesville, Florida, U.S.A. (D. Wahl).

ANIC—Australian National Insect Col-

lection, CSIRO, Canberra, A.C.T., Australia. (I.D. Naumann).

BMNH—The Natural History Museum, London, United Kingdom. (C. Taylor, C.R. Vardy).

BPBM—Bernice P. Bishop Museum, Honolulu, Hawaii, U.S.A. (G.M. Nishida).

CASC—California Academy of Sciences, Golden Gate Park, San Francisco, California, U.S.A. (W.J. Pulawski).

CMNH—Carnegie Museum of Natural History, Pittsburgh, Pennsylvania, U.S.A. (J.E. Rawlings).

CNCI—Canadian National Collection, Agriculture and Agri-Food Canada, Ottawa, Ontario, Canada. (J. Huber, L. Masner).

CSUC—Department of Entomology, Colorado State University, Fort Collins, Colorado, U.S.A. (H.E. Evans).

FSAG—Collections Zoologiques, Faculté des Sciences Agronomiques, Gembloux, Belgium. (J. Leclercq).

FSCA—Florida State Collection of Arthropods, Gainesville, Florida, U.S.A. (L. Stange, J. Wiley).

HNHM—Zoological Department, Hungarian Natural History Museum, Budapest, Hungary. (J. Papp).

IIES—Instituto de Investigaciones Entomológicas Salta "INESALT", Salta, Argentina. (M.A. Fritz).

IMLA—Fundación E Instituto Miguel Lillo, Universidad Nacional de Tucumán, Tucumán, Argentina. (A. Willink).

IZAV—Instituto de Zoología Agrícola, Universidad Central de Venezuela, Maracay, Aragua, Venezuela. (J. Luis García).

LACM—Los Angeles County Museum of Natural History, Los Angeles, California, USA. (R. Snelling).

MACN—Museo Argentino de Ciencias Naturales, Buenos Aires, Argentina. (A. Roig Alsina).

MCZC—Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, U.S.A. (C. Vogt).

MJMO—Decanato de Agronomía, Univ-

ersidad Centro Occidental, Barquisimeto, Lara, Venezuela. (E. Yustiz).

MPEG—Museu Paraense Emilio Goeldi, Belem, Para, Brazil. (W.L. Overal).

MTEC—Entomology Collection, Montana State University, Bozeman, Montana, U.S.A. (M. Ivie).

MUCR—Museo de Insectos, Universidad de Costa Rica, Ciudad Universitaria, Costa Rica. (P. Hanson).

NHMW—Naturhistorisches Museum Wien, Wien, Austria. (M. Fischer).

OSUO—Department of Entomology Collection, Oregon State University, Corvallis, Oregon, U.S.A. (G.R. Ferguson).

PMAE—Provincial Museum of Alberta, Edmonton, Alberta, Canada.

RMNH—Nationaal Natuurhistorische Museum, Leiden, The Netherlands. (C. van Achterberg).

SEMC—Snow Entomological Museum, University of Kansas, Lawrence, Kansas, U.S.A. (R.W. Brooks).

SDMC—San Diego Natural History Museum, San Diego, California, U.S.A. (D.K. Faulkner).

SMTD—Staatliches Museum für Tierkunde, Dresden, Germany.

USNM—Smithsonian Institution, Washington D.C., U.S.A. (K.V. Krombein, A.S. Menke).

ZMAN—Instituut voor Taxonomische Zoologie, Universiteit van Amsterdam, Amsterdam, Netherlands. (W. Hogenes).

ZMUM—Zoological Museum, University of Moscow, Moscow, Russian Federation. (A.V. Antropov).

INCASTIGMUS Finnamore

Incastigmus Finnamore 1995:234. Type species:

Incastigmus inti Finnamore 1995:235, by original designation.

Recognition.—Specimens of *Incastigmus* can usually be recognized by the presence on the scutum of a median groove or posteromedian pit, a unique structure within western hemisphere Stigmini. The groove or pit must not be confused with the me-

dian, or posteromedian ridge or multiple ridges in some species of Neotropical *Stigmus*. The following combination will provide assurance of generic assignment for all known species: hind wing media diverging before cu-a; acetabular carina present; mandibles tridentate in both sexes with apicoventral tooth acute in female; and scutum with a median groove or posteromedian pit.

Since publication of Part 1 of this work (Finnamore 1995) I have found several males of *Llaqlastigmus mantanti* Finnamore which can be confused with those *Incastigmus* in which the scutal groove is reduced. Male *mantanti* sometimes have a series of short, evanescent, longitudinal striae along the posterior scutal margin in which the median pair mimic the posteromedian pit of some *Incastigmus*. The large bilobed labrum (lobes broad and separated by a slight emargination) in *mantanti* indicates it is a *Llaqlastigmus*, whereas *Incastigmus* possess a relatively small quadrilobed labrum (median lobes narrow and separated by a deep median notch). Male *mantanti* have been included in the following key to species of *Incastigmus* in order to avoid spreading mandibles to expose the labrum for generic determination. Female *mantanti* possess a large bilobed labrum and a slightly enlarged, blunt, apicoventral mandibular tooth, both diagnostic characters for *Llaqlastigmus*, and should not be confused with *Incastigmus* (apicoventral mandibular tooth acute) in the key to genera of Stigmini (Finnamore 1995). In addition, female *mantanti* lack any trace of a posteromedian scutal pit and the lateral clypeal teeth meet or exceed the median clypeal teeth in length. In *Incastigmus* the lateral clypeal teeth are smaller than the median teeth.

Description.—HEAD: Labrum 4-lobed, with narrow deep median emargination; mandibular apex of both sexes tridentate; apicoventral mandibular tooth in female acute; inner basal mandibular tooth absent; clypeal apex in male without bev-

elled modifications, in female with 4 teeth; interantennal tubercle and frontal line absent; micropore field present between lateral ocellus and eye; eye inner margins converging below; eyes at most partially margined by a carina; occipital carina present, complete, not joining hypostomal carina, simple in female, raised, foveolate in male. MESOSOMA: Scutum with median groove or at least posteromedian pit; notauli often elongate, reaching posterior scutal margin; acetabular carina present;

omaulus continuous with acetabular carina; scrobal sulcus present; hypoeimeral area without coarse sculpture; mid basitarsus of male elongate, as long as next 3 tarsomeres combined; posterior margin of hind tibia with 2 or 3 spines; fore wing asetose in cellular area; hind wing media diverging before cu-a; hind wing submedian cell of normal size, not reduced. METASOMA: Petiole carinate; pygidial plate narrow, absent in male; digitus longer than cuspis, clubbed.

KEY TO SPECIES OF *INCASTIGMUS*

1	Male: antenna with 11 flagellomeres, metasoma with 7 exposed terga	2
1'	Female: antenna with 10 flagellomeres, metasoma with 6 exposed terga	29
2	Vertex with micropore field present as a small oval or circular patch between lateral ocellus and eye margin (Fig. 14)	3
2'	Vertex with micropore field forming a narrow linear furrow between lateral ocellus and eye margin (Figs. 50, 58)	24
3	Scutum with at most median scutal groove complete (Figs. 3, 15, 43, 71, 79); notauli attenuated posteriorly, not reaching posterior scutal margin except in a few cases by weak extensions; median scutal groove usually incomplete, sometimes reduced to a small pit on posterior scutal margin, or absent, or sometimes contiguous with admedian lines	4
3'	Scutum with 3 complete grooves (Figs. 23, 31); notauli reaching posterior scutal margin, not attenuated posteriorly; median scutal groove reaching admedian lines, not attenuated anteriorly	20
4	Preomalar area sparsely setose with underlying sculpture clearly evident; median scutal groove present at least as a small pit on posterior margin; labrum quadrilobed	5
4'	Preomalar area densely setose, with underlying sculpture obscured; posterior scutal margin with a series of evanescent striae; labrum bilobed; se. Brazil	5
	<i>Llaqhastigmus mantanti</i> Finnamore	
5	Mesosoma with at least pronotum red, sometimes entirely red	6
5'	Mesosoma black, at most pronotal lobe slightly red	7
6	Transverse pronotal carina with prominent tooth at humeral angle (Figs. 70–72); median scutal groove and notauli extending over most of scutum (Fig. 71); Costa Rica, Colombia, Ecuador, Peru, Trinidad	19. <i>pyrrhopyxis</i> new species
6'	Transverse pronotal carina rounded at humeral angle, without tooth; no median scutal groove and notauli restricted to anterior third; Lesser Antilles: Dominica, Grenada, St. Vincent	22. <i>thoracicus</i> (Ashmead)
7	Gena with tooth-like projection, ventrally (Fig. 12a); Peru, Ecuador, Colombia, Brazil (Mato Grosso)	6. <i>hexagonalis</i> (Fox)
7'	Gena smoothly rounded, without swellings, ventrally	8
8	First metasomal tergum dull, densely microsculptured; se. Brazil	18. <i>pynoglypticus</i> new species
8'	First metasomal tergum shiny, without microsculpture	9
9	Median scutal groove reduced, present only posteriorly and not reaching admedian lines (Figs. 8, 43).	10
9'	Median scutal groove well developed, reaching and often contiguous with admedian lines. (Figs. 3, 15, 79)	14

- 10 Pronotal lobes white 11
- 10' Pronotal lobes black, occasionally brown or yellow-brown 12
- 11 Pronotal lobe rounded (Figs. 42, 44); Central America 13. *mystaxalbus* new species
- 11' Pronotal lobe toothed; South America 24. *urqicus* new species
- 12 Transverse pronotal carina with tooth at humeral angle larger than tooth on vertical pronotal carina; southern Mexico (Quintana Roo) to Panama 25. *zeephyrus* new species
- 12' Transverse pronotal carina with tooth at humeral angle smaller than tooth on vertical carina; South America 13
- 13 Vertex, posterior to micropore field, with shallow elliptical depression defined posteriorly by weak carina; flagellomeres II-VI or more elongate, depressed basally, each with a broad shiny tylus on apical half; Ecuador, Peru, Bolivia, Brazil (Pernambuco) 12. *mauracis* new species
- 13' Vertex, posterior to micropore field, flat, without depression; flagellomeres cylindrical, not depressed basally; Venezuela, Ecuador 5. *chiucha* new species
- 14 Flagellomeres elongate, about 2x width, without tyli (Fig. 77); flagellomere XI broadly curved, more than 2x width; notauli extending $\frac{2}{3}$ length of scutum (Fig. 79); se. Brazil 21. *sunicerus* new species
- 14' Flagellomeres relatively short, length subequal to width or, if elongate, then rarely 2x width and flagellomere XI cylindrical, not curved; tyli often present (Fig. 1); notauli often approaching posterior margin of scutum 15
- 15 Hypersternaulus much narrower than scrobal sulcus; raised, linear tyli on flagellomeres III or IV to VII; Brazil (Ceara) 3. *cearaensis* new species
- 15' Hypersternaulus equal to or wider than scrobal sulcus (measured vertically) (Fig. 16); flagellomeres usually without tyli, or tyli obscure 16
- 16 Vertex, gena and posterior $\frac{2}{3}$ of scutum shiny, without microsculpture; median scutal groove tapered to a point just posterior to apex of admedian lines; Trinidad, Venezuela, Panama, Colombia, Ecuador, Bolivia, Brazil (Goiás) 17. *prophorodontis* new species
- 16' Either vertex, gena or scutum dull, with microsculpture; median scutal groove reaching admedian lines 17
- 17 Pronotal lobe toothed in dorsal view, forming a sharp acute angle, or flattened and wing-like in frontal view (Figs. 38–40); Colombia, to Bolivia, Brazil (Amazonas) 11. *kunkopteryx* new species
- 17' Pronotal lobe rounded in dorsal or frontal view, forming an obtuse angle (Figs. 15, 16) 18
- 18 Scutum striatopunctate on posterior $\frac{2}{3}$; Peru 2. *caelukhus* new species
- 18' Scutum more or less smooth, without striae between grooves 19
- 19 Flagellum with tyli (Fig. 29), or ventral brush of setae (Figs. 69, 81) 20
- 19' Flagellum without tyli (at least not visible in profile) and without ventral brush of setae (Fig. 13); south of Guiana Shield to Brazilian Highlands 7. *ictericornis* new species
- 20 Flagellum with short, ventral setal brush (Figs. 69, 81); tyli absent, flagellomere XI symmetrical 21
- 20' Flagellum without setal brush (Figs. 21, 29); tyli usually present, flagellomere XI often asymmetrical due to ventral tylus (Fig. 22) 23
- 21 Mesosoma with at least pronotum red, sometimes entirely red; Costa Rica, Colombia, Ecuador, Peru, Trinidad 19. *pyrrhopyxis* new species
- 21' Mesosoma black 22
- 22 Vertex and frons uniformly microsculptured, dull; scutum with irregular striae on posterior $\frac{2}{3}$; Peru 2. *caelukhus* new species
- 22' Vertex, anterior to mid ocellus, shiny (Fig. 82), microsculpture denser on frons than on vertex; scutum with striae usually less developed and only between notauli; se. Brazil, Paraguay, Peru Ecuador, Colombia, Venezuela, Suriname ... 23. *trichodocerus* new species
- 23 Flagellomere XI unmodified, cylindrical, without tylus (Fig. 30); Peru, Bolivia, Paraguay, Brazil (Bahia, Goiás, Mato Grosso, São Paulo) 10. *iphis* new species

- 23' Flagellomere XI with tylus on ventral surface imparting an asymmetrical shape (Fig. 22); Colombia, Ecuador, Peru, Bolivia, Brazil (Mato Grosso, Para) 9. *inti* Finnermore
- 24 Tyli of flagellomeres I-XI with sparse, short brush of setae (Figs. 69, 81); Argentina, Bolivia, Brazil (São Paulo) 16. *paranicus* new species
- 24' Tyli of flagellomeres without setal brush (Fig. 57), at most a few setae at apices of tyli (Fig. 49) 25
- 25 Propodeum irregularly striate, without areolae; Venezuela. 20. *strepsilineatus* new species
- 25' Propodeum areolate (Fig. 59) 26
- 26 Pronotal lobe with carinate tooth or peg-like projection (Figs. 50–52) 27
- 26' Pronotal lobe rounded, if somewhat pointed then not carinate (Figs. 59, 60) 28
- 27 Pronotal lobe toothed (acutely produced), white (Figs. 50–52); Venezuela, Colombia, Bolivia, Brazil (Mato Grosso, Minas Gerais, Pernambuco, Rio de Janeiro) 14. *mytior* new species
- 27' Pronotal lobe peg-like (bluntly produced), brown; Peru 4. *ceromus* new species
- 28 Flagellomere XI with tylus imparting an asymmetrical shape; Argentina, Bolivia, se. Brazil 1. *aylaxiter* new species
- 28' flagellomere XI cylindrical, symmetrical, with at most indistinct tylus (Fig. 57); Mexico to Argentina 15. *neotropicus* (Kohl)
- 29 Median clypeal lobe with 2 elongate setae arising from subapical semicircular depression (Figs. 18, 37, 38, 85, 86) 30
- 29' Median clypeal lobe with 2 elongate setae arising from 2 narrowly separated subapical pits or a broad transverse depression (Figs. 10, 46, 62, 74) 33
- 30 Mesopleuron shiny, hypopleural area unsculptured on ventral half or more, dorsal half finely microsculptured (Fig. 88); pronotal lobe rounded, conical (Fig. 87); scutum shiny posteriorly, often with short longitudinal irregular grooves (Figs. 87, 88); stigma of fore wing orange, brown or black; se. Brazil, Paraguay, Peru, Ecuador, Colombia, Venezuela, Suriname 23. *trichodocerus* new species
- 30' Mesopleuron dull, microsculptured throughout (Fig. 20), OR pronotal lobe dorsally flattened (not conical), somewhat carinate anteriorly and laterally, OR posterior $2/3$ of scutum with coarse regular striae; stigma of fore wing brown or black 31
- 31 Scutum multistriate on posterior $2/3$; mesopleuron shiny in part; pronotal lobe conical, not flattened or carinate; Peru 2. *caclukhus* new species
- 31' Scutum without multiple striae except occasionally along posterior margin (Figs. 19, 39); mesopleuron microsculptured throughout OR pronotal lobe dorsally flattened, somewhat carinate anteriorly and laterally (Figs. 39–40) 32
- 32 Pronotal lobe toothed, flattened dorsally, somewhat carinate anteriorly and laterally (Figs. 38–40); hypopleural area shiny (Fig. 40); Colombia to Bolivia, Brazil (Amazonas) 11. *kunkopteryx* new species
- 32' Pronotal lobe rounded, conical, without carinae (Figs. 19–20); hypopleural area dull, microsculptured throughout (Fig. 20); south of Guiana shield to Brazilian Highlands 7. *ictericornis* new species
- 33 Median scutal groove absent, indistinguishable from other grooves along posterior margin (Fig. 47) 34
- 33' Median scutal groove present, at least as an elongate pit on posterior margin (Figs. 27, 63) 36
- 34 Clypeus white or yellow in apical third; mesosoma and petiole black; Central America 13. *mystaxalbus* new species
- 34' Clypeus black; mesosoma and petiole black to extensively red 35
- 35 Median clypeal lobe absent; mesosoma and petiole usually extensively red; pronotal lobe white; Lesser Antilles: Dominica, Grenada, St. Vincent 22. *thoracicus* (Ashmead)
- 35' Median clypeal lobe present; mesosoma and petiole black, sometimes partially red on

- pronotum, scutum, scutellum, and mesopleuron; pronotal lobe yellow to red; southern Mexico (Quintana Roo) to Panama 25. *zephyrus* new species
- 36 Gena with ventral tooth (Fig. 12a); Brazil (Mato Grosso), Peru, Ecuador, Colombia 6. *hexagonalis* (Fox)
- 36' Gena smoothly rounded ventrally, at most with small swelling 37
- 37 Scutum red 38
- 37' Scutum all black, or red posteriorly 39
- 38 Clypeus lateral to median lobe, simple, without tooth (Fig. 74); Costa Rica, Colombia, Ecuador, Peru, Trinidad 19. *pyrrhopyxis* new species
- 38' Clypeus quadridentate, median lobe emarginate, bilobed, and flanked by small lateral tooth; Panama 8. *ignithorax* new species
- 39 First metasomal tergum dull, with dense, coarse microsculpture; se. Brazil 18. *pyncoglypticus* new species
- 39' First metasomal tergum shiny, without or with little microsculpture 40
- 40 Pronotal lobe red, brown or black 41
- 40' Pronotal lobe white 44
- 41 Gena ventrally with small, subconical swelling near hypostomal carina; Trinidad, Venezuela, Panama, Colombia, Ecuador, Bolivia, Brazil (Goias) 17. *prophorodontis* new species
- 41' Gena ventrally flat, without swelling near hypostomal carina 42
- 42 Lateral clypeal tooth located beneath antennal socket and separated from median lobe by deep emargination (Fig. 6); Venezuela, Ecuador 5. *chinchu* new species
- 42' Lateral clypeal tooth, if present, forming part of the median lobe, not distinct and not separated by emargination, appearing as a small basolateral angle on the median lobe 43
- 43 Pronotal lobe black or dark brown-black; lateral clypeal tooth present laterad of median clypeal lobe; Ecuador, Peru, Bolivia, Brazil (Pernambuco) 12. *mauracis* new species
- 43' Pronotal lobe yellow-brown; lateral clypeal tooth absent; Brazil (Minas Gerais) 24. *urqicus* new species
- 44 Pronotal lobe toothed, peg-like or sharply acute (Figs. 38–40, 50–52) 45
- 44' Pronotal lobe rounded (Figs. 25, 27, 28, 35, 36) 47
- 45 Pronotal lobe with peg-like projection; median scutal groove reaching admedian lines; notauli often elongate, attenuating near posterior scutal margin; Peru 4. *ceronius* new species
- 45' Pronotal lobe acute or dorsally flattened, wing-like; scutal grooves variable (Fig. 55) ... 46
- 46 Median scutal groove reaching admedian lines; notauli elongate (Fig. 39); pronotal lobes sometimes dorsally flattened (Fig. 38); Peru, Colombia 11. *kunkopteryx* new species
- 46' Median scutal groove and notauli short, incomplete (Fig. 55); pronotal lobe conical, acute; Venezuela, Colombia, Bolivia, Brazil (Mato Grosso, Minas Gerais, Pernambuco, Rio de Janeiro) 14. *mytior* new species
- 47 Scutum with 3 complete grooves, notauli reaching posterior scutal margin (Fig. 27); scutum shiny, microsculptured usually along anterior margin only 48
- 47' Scutum with at most median groove complete (Fig. 67), notauli short; scutum usually microsculptured 49
- 48 Vertex anterolaterally to mid ocellus shiny, without microsculpture (Fig. 25); Colombia, Ecuador, Peru, Bolivia, Brazil (Mato Grosso, Para) 9. *inti* Finnamore
- 48' Vertex anterolaterally to mid ocellus dull, microsculptured (Fig. 33); Peru, Bolivia, Paraguay, Brazil (Bahia, Goias, Mato Grosso, São Paulo) 10. *iphis* new species
- 49 Lower hypoepimeral area shiny, without microsculpture; mid mesopleural area shiny and relatively large due to moderate and small size of foveae of scrobal sulcus, hypersternaulus and omaulus (Fig. 68); occipital carina not raised ventrally (Fig. 68); antenna beyond flagellomere II blackened, apical flagellomeres black; clypeal setae sparse, not obscuring underlying sculpture and clypeus punctures widely scattered (Fig. 66); Argentina, Bolivia, Brazil (São Paulo) 16. *paranicus* new species

49'	Lower hypoepimeral area and mid mesopleural area microsculptured or shiny, the latter relatively small due to comparatively large size of foveae of scrobal sulcus, hypersternaulus and omaulus (Fig. 64); occipital carina often slightly raised ventrally (Fig. 64); antenna usually yellow to brown, seldom blackened; clypeal setae variable, scattered and not obscuring underlying microsculpture, to dense and obscuring underlying sculpture (Fig. 62); Mexico to Argentina	50
50	Head and mesosoma extensively microsculptured, usually entirely; scutum punctate, often obscurely; clypeal setae sparse, not obscuring sculpture; Argentina, Bolivia, se. Brazil	1. <i>aylaxiter</i> new species
50'	Vertex adjacent to ocelli, scutum, lower hypoepimeral area and mesopleuron often shining (Fig. 64); scutum punctate to coarsely striatopunctate (Fig. 63); clypeal sculpture often obscured by dense appressed setae (Fig. 62)	51
51	Micropore field of vertex small, elongate-triangular, usually much longer than wide, width about $\frac{1}{3}$ ocellocular distance or less (Fig. 61); clypeus usually concealed by dense appressed setae (Fig. 62); USA (Texas) to Argentina	15. <i>neotropicus</i> (Kohl)
51'	Micropore patch of vertex large, circular, extending about half ocellocular distance; clypeus with sparse setae that do not obscure sculpture; se. Brazil	21. <i>sumicerus</i> new species

1. *Incastigmus aylaxiter* Finnamore
new species

Derivation of Name.—The species epithet is derived from two Greek words, *aylax*, meaning groove, and *iter*, meaning passage, in reference to the median scutal groove found in this species.

Diagnosis.—Males of *aylaxiter* can be recognized on the basis of the narrow linear micropore field between the compound eye and lateral ocellus, flagellomeres without a ventral setal brush, tylus on flagellomere XI imparting an asymmetrical appearance, and the rounded pronotal lobe. Females are difficult to recognize, but the following combination of characters should prove useful: median clypeal lobe with 2 narrowly separated subapical pits, clypeus not obscured by appressed setae, vertex microsculptured throughout, scutum with median groove not reaching admedian lines, notauli short and not reaching scutal midlength, pronotal lobe rounded and white, hypoepimeral area microsculptured throughout, and metasomal tergum 1 shiny. This species most resembles *paranicus* and *neotropicus*. Males are easily distinguished from other species using the diagnostic characters. Females of *aylaxiter* are separated from *paranicus* on

the basis of the entirely microsculptured hypoepimeral area (in *paranicus* the lower hypoepimeral area is shiny), and separated from *neotropicus* on the basis of the less extensively setose clypeus (clypeus usually obscured by relatively dense appressed setae in *neotropicus*) and by its distribution which is apparently restricted to the Southern half of South America, whereas *neotropicus* ranges from Argentina to USA (Texas).

Male.—Length 3.5–4.0 mm. HEAD. Flagellomeres without ventral brush of setae; narrow linear tyli present on flagellomeres I to XI, tylus on flagellomere XI imparting asymmetrical appearance and truncate tip; flagellomere I length $1.3 \times$ maximum width as measured with tylus in profile; flagellomere X length $1.1 \times$ maximum width as measured with tylus in profile. Clypeus obscured by dense appressed setae which extend up frons along inner margins of eyes to slightly less than height of scape; frons, vertex and gena entirely microsculptured; punctures of frons sparse, irregular, 2 or more diameters apart; punctures of gena obscured, more regular in ventral region, 3 or more diameters apart, without ventral tooth or swelling; narrow linear micropore field present between compound eye and lat-

eral ocellus, without depression behind it; OOD $1.4 \times \text{LOD}$. MESOSOMA. Transverse pronotal carina forming a right angle at humeral angle, toothed ventrally; transverse pronotal groove longitudinally striate; pronotal lobe rounded, with weak anterior carina; lateral pronotal area longitudinally striate. Scutum uniformly microsculptured with sparse, irregular punctures, 2 or more diameters apart in mid region; median scutal groove extending to scutal midlength, but not reaching admedian lines; notauli attenuated near scutal midlength; posterior margin of scutum with a series of short irregular striae. Scutellum microsculptured with faint median groove and several punctures in lateral area. Setae of preomalar area sparse, not obscuring sculpture. Mesopleuron microsculptured, punctures not evident; hypersternaulus, scrobal sulcus, and omaulus foveolate. Metapleuron microsculptured with longitudinal striae along posterior margin. Propodeum shiny, with weak microsculpture, areolate, except for shiny, partially striate region adjacent to metapleuron; propodeal enclosure defined by raised carina separating it from the lateral sphere. METASOMA. First tergum shiny, without microsculpture, with minute, sparse punctures; succeeding terga with an oily sheen, with relatively larger punctures, 5 or more diameters apart. Sterna shiny, with oily sheen, with sparse punctures on basal sterna, but reaching greatest density on sternum VI where they are about 1 diameter apart. COLOR. Black. White: mandible, basal half; pronotal lobe. Yellow-brown: palpi; mandible, except base and apex; antenna, except flagellomeres VI-XI; tegula; fore leg, except coxa and femur; mid leg, except coxa and femur; hind trochanter and hind tarsus.

Female.—Length 4.0–5.0 mm. Similar to male except as follows: flagellomeres without tyli or specialized setae; flagellomere I length $1.7 \times$ maximum width; clypeus shiny, setae more dense than in other species, but not obscuring sculpture,

with punctures on median area 1 to 2 diameters apart; median clypeal lobe with 2 teeth separated by narrow emargination and a pair of narrowly separated subapical pits; sculpture of frons along inner margin of eyes not obscured by appressed setae; micropore field present as an elongate triangle between compound eye and lateral ocellus; OOD $1.8 \times \text{LOD}$.

Material Examined.—70 ♂, 119 ♀. HOLOTYPE MALE: Brazil: M.G. Ouro Preto IV-1954 N.L.H. Krauss (USNM). Paratypes: **ARGENTINA: Buenos Aires:** Buenos Aires: 18-IV-1912 J.B. (1♂ MACN); 4-V-1912 J.B. (1♀ MACN); 2-V-1915 J.B. (1♂ MACN); Moreno, Fritz (2♀ IIES). Punta Lara 26-I-1968 H. & M. Townes (1♂ AEIC). **Catamarca:** La Merced 26-VIII-1968 L. Pena (1♂ AEIC). Palo Labrado 27-III-1971 Fidalgo (1♂ IMLA). **Cordoba/Catamarca:** Cordoba, Copacabana Fritz (2♂ IIES). **Jujuy:** Ledesma Fritz (1♂ IIES). Perico del Carmen 21-X-1968 L. Pena (4♂ CNCI). **La Rioja:** Cuesta de Miranda 2020m 15-XII-1971 Stange—Porter (1♂ IMLA). **Salta:** Cachi 20-22-I-1966 C. Porter (1♂ MCZC). Magdalena 23-I-1966 H. & M. Townes (1♀ AEIC). Oran, Abra Grande 18-25-X-1968 C. Porter (1♂ MCZC). Pocitos XII-1972 Fritz (1♂ IIES); XII-1971 Fritz (1♂ IIES). Rosario Lerma X-1984 Fritz (3♂ IIES). Tartagal A. Martinez (1♂ IIES). **Tucuman:** Amaicha del Valle: 28-XII-1965 H. & M. Townes (1♂ AEIC); 29-XII-1965 H. & M. Townes (2♂ AEIC); 9-III-1966 Garcia—Porter (1♂ MCZC). Ciudad Tucuman 24-II-1952 A. Ogloblin (1♂ IIES); [no date] Ogloblin (1♂ IIES); 1-1906 Vezenvi (1♀ NHNM); Tucuman, Horco Molle 10-XI-1967 C. Porter (1♂ MCZC). **BOLIVIA:** (2♀ NHMW). Rio Beni, [Rurrenabankue] X W.M. Mann, Mulford Bio. Expl. 1921–22 (1♂ USNM). **El Beni:** Cochabamba 10–4-1957 (2♀ FSAG). **BRAZIL:** [Brasilien] Fritz Muller, coll. G. Mayr (1♀ NHMW). **Amazonas:** R. Japura 13-IX-1904 Ducke (1♀ MPEG). **Bahia:** [Bim Fim] 21-XI-1907 (1♀ CMNH). [Liagoa Feia] 9-VI-1908 (1♀ CMNH). **Maranhao:** [Varanahao Codo]

17-VI-1901 Dücke (1♀ MPEG). **Minas Gerais:** Barbacena 23-X-1905 Dücke (1♀ MPEG). **Paraná:** Campina Grande nr. Curitiba 10-II-1966 H. & M. Townes (1♀ AEIC). **Rio de Janeiro:** Parque Nacional Serra da Bocaina, S.J. Barreiros: 4-7-XI-1967 1600m Alvarenga & Seabra (1♂ 1♀ AEIC); XI-1968 1650m Alvarenga & Seabra (1♂ 6♀ AEIC); 13-17-I-1969 1600m Porter & Garcia (1♂ MCZC); IV-1969 800m F.M. Oliveira (2♀ AEIC); XI-1969 800m F.M. Oliveira (1♀ AEIC). **Rio de Janeiro** (1♀ CMNH). **Rio de Janeiro, Teresopolis:** 9-X-1923 W.S. Bristowe B.M. 1967–510 (1♂ BMNH); 12-III-1966 H. & M. Townes (2♀ AEIC). **Santa Catarina:** Nova Teutonia: 27°11' B 52°23' L F. Plaumann (various dates) 1935–1967 (10♂ 10♀ BMNH, 2♂ 16♀ MCZC, 1♂ 3♀ OSUO); 27°11' B 52°23' L IX-1967 300–500m F. Plaumann (1♀ MCZC); 27°11' B 52°23' L VI-1968 300–500m F. Plaumann (1♂ MCZC). **São Paulo:** S. Bocaina III-1973 (2♀ PMAE). São Paulo 1928 Bury J. Gyorgy (1♀ HNHM); (various dates) 1968–1969 V.N. Alin (1♂ 17♀ USNM); (various dates) 1969–1982 (21♂ 41♀ ZMUM).

2. *Incastigmus caelukhus* Finnamore new species

Derivation of Name.—The name *caelukhus* is derived from two words, the Latin *caelo*, meaning to engrave, and the Quichuan term, *ukhu*, meaning body, in reference to the striatopunctate scutum of this species.

Diagnosis.—Males of this species can be recognized by the irregularly ridged, striatopunctate scutum with complete or nearly complete median scutal groove and notauli, the uniformly microsculptured frons and vertex, and the ventral brush of setae on the flagellomeres. Females can also be recognized by the ridged, striatopunctate sculpture of the scutum, the uniformly microsculptured frons and vertex, and the semicircular depression on the median clypeal lobe from which long setae arise.

Male.—Length 3.5–4.0 mm. **HEAD.** Flagellomeres with a ventral brush of short

fine setae, tyli absent; flagellomere I length $1.8 \times$ apical width; flagellomere X length $1.2 \times$ apical width; flagellomere XI straight, cylindrical, apex conical. Clypeus obscured by dense appressed setae which extend up frons along inner eye margin to height of antennal socket; frons and vertex dull, microsculptured, with sparse, irregular, punctures, 3 or more diameters apart; gena microsculptured, obscurely punctate, without ventral tooth or swelling; micropore field present between compound eye and lateral ocellus, without depression behind it; lateral ocelli closer to each other than to eyes; OOD $1.3 \times$ LOD. **MESOSOMA.** Transverse pronotal carina ending in a right angle at humeral angle, toothed ventrally; transverse groove longitudinally striate; pronotal lobe rounded without anterior carina; lateral pronotal area longitudinally striate. Scutum ridged, striatopunctate, less so on lateral areas, microsculptured on anterior third, otherwise shiny; median scutal groove contiguous with admedian lines, notauli continuous to posterior margin. Scutellum microsculptured, with median sulcus, and scattered lateral punctures. Preomalar area anteriorly with sparse setae, sculpture visible. Mesopleuron with weak microsculpture, mostly shiny; hypersternaulus, scrobal sulcus, and omaulus, coarsely foveolate. Metapleuron shiny, weakly microsculptured, with short longitudinal striae along posterior margin. Propodeum shiny, coarsely areolate, except area adjacent to metapleuron which is shiny, unsculptured; propodeal enclosure not differentiated from lateral spheres. **METASOMA.** Terga shiny with an oily sheen, with minute, obscure, punctures; sterna shiny, sparsely punctate, with punctures not increasing in density on posterior sterna. **COLOR.** Black. White: mandible, except apex; pronotal lobe. Yellow-brown: palpi; antenna; tegula; fore leg, except coxa; mid leg, except coxa; hind trochanter and tarsus.

Female.—Length 4.0–4.5 mm. Similar to

male except as follows: flagellomere I length $1.3 \times$ apical width. Clypeus shiny, sparsely punctate and sparsely setose; median clypeal lobe truncate, without teeth, with a large subapical semicircular depression from which a pair of long setae arise; frons along inner eye margin obscured by appressed setae; OOD $1.7 \times$ LOD; color as in male, except 1 specimen which has a red prothorax.

Material Examined.—3 ♂, 2 ♀. HOLOTYPE FEMALE: Peru: 10km S. Chiclayo 19-III-1951 Ross & Michelbacher (CASC). Paratypes: **PERU**: 10km S. [Chiclayo] 19-III-1951 Ross & Michelbacher (2♂ CASC). **Lambayeque**: 18km E. Olmos 22-VII-1982 R.B. Miller, L.A. Stange (1♀ FSCA). **Piura**: Piura 1-XI-1910-7-I-1911 C.H. Townsend, Leher (1♂ USNM).

3. *Incastigmus cearaensis* Finnamore new species

Figs. 1-4

Derivation of Name.—*Cearaensis* is named in reference to the state of Ceara in Brazil, from where most of the specimens in this study have been collected.

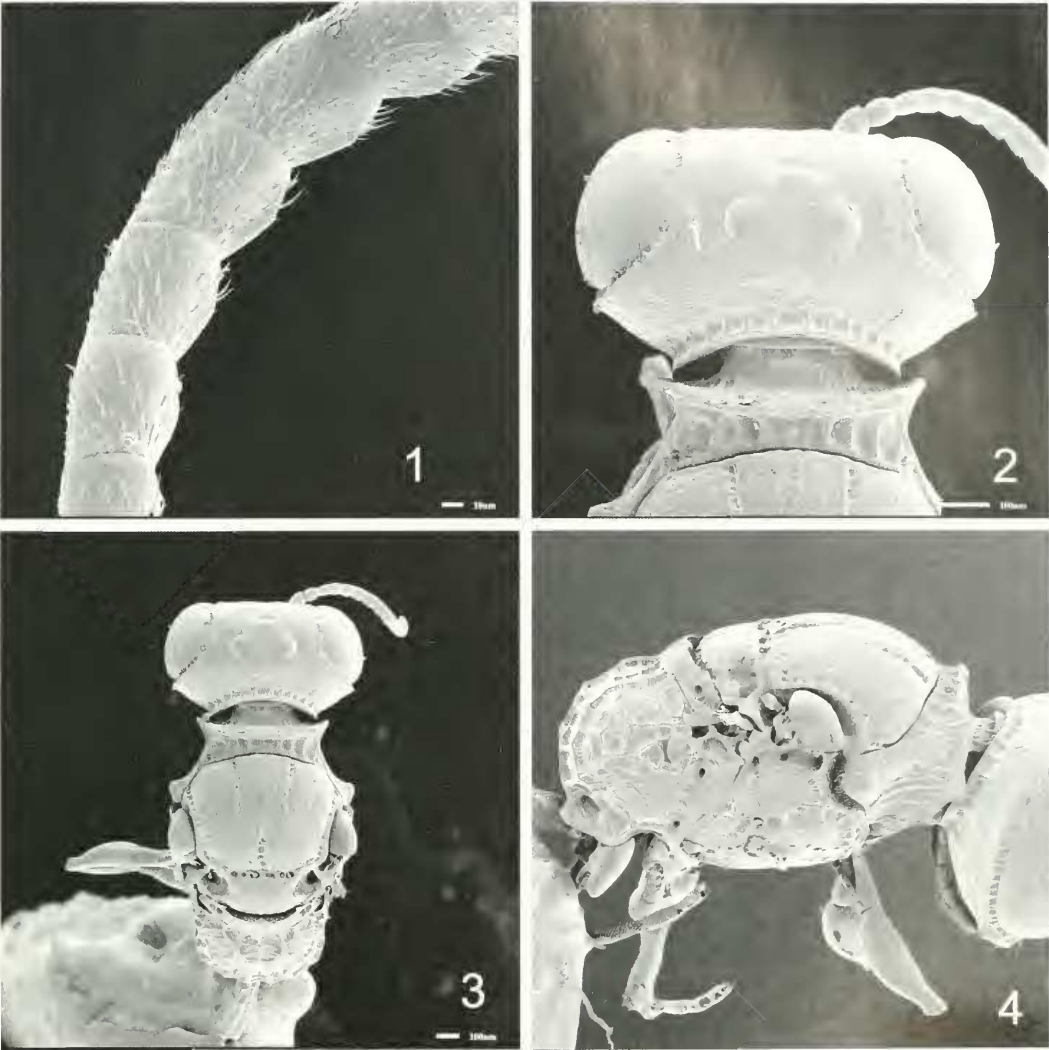
Diagnosis.—The narrow hypersternaulus and the presence of tyli on flagellomeres III to V will distinguish the male of this species from others in the genus. The female is unknown.

Male.—Length 3.5-4.0 mm. HEAD. Flagellomeres without specialized setae; linear tyli present on flagellomeres I to V or VII; flagellomere I length $1.5 \times$ apical width; flagellomere X length $1.3 \times$ apical width; flagellomere XI straight, cylindrical, apex conical. Clypeus obscured by dense appressed setae which extend up frons along inner margin of eye to about height of antennal socket; head entirely microsculptured, slightly less so on vertex; punctures strong, sparse, three or more diameters apart on vertex; gena microsculptured, with punctures in lower area 3 or more diameters apart, without ventral tooth or swelling; small oval micropore field evident between compound eye and

lateral ocellus; without depression behind it; lateral ocelli slightly closer to eyes than to each other; OOD $1.4 \times$ LOD. MESOSOMA. Transverse pronotal carina toothed at humeral angle, and toothed ventrally; transverse pronotal groove longitudinally striate; pronotal lobe rounded, without anterior carina; lateral pronotal area longitudinally striate. Scutum microsculptured, dull, with several longitudinal striae along posterior margin; notauli attenuated near scutal midlength; median scutal groove present posteriorly, attenuated near scutal midlength; scutal punctures strong, sparse, 1 or more diameters apart. Scutellum microsculptured, with several punctures in median lateral area. Preomalar area anteriorly with sculpture visible and sparse setae. Mesopleuron microsculptured, dull, with sparse, obscure, punctures; hypersternaulus narrow, linear, with relatively fine foveae; scrobal sulcus, and omaulus coarsely foveolate; metapleuron dull, microsculptured, with several short longitudinal striae along posterior margin. Propodeum shiny, with weak microsculpture, coarsely areolate, except area adjacent to metapleuron which has fine microstriate sculpture; propodeal enclosure not differentiated from lateral spheres. METASOMA. Tergum I shiny with weak microsculpture; succeeding terga with oily sheen, punctures sparse, obscure, many diameters apart. Sterna shiny with weak microsculpture imparting an oily sheen, punctures obscure, sparse, 3 or more diameters apart. COLOR. Black. White: pronotal lobe. Yellow-brown: palpi; mandible, except apex; antenna; fore leg, except coxa; mid leg, except coxa; hind tarsus; apical sterna.

Female.—Unknown.

Material Examined.—4 ♂. HOLOTYPE MALE: Brazil: SP, Faz. Campininas, Mogi Guacu 29-31-XII-1969 JM & BA Campbell (CNCI). Paratypes: **BRAZIL**: **Ceara**: Ser-rado Araripe, Crato V-1969 M. Alvarenga (3♂ PMAE).



Figs. 1–4. *Incastigmus ceiraensis* ♂. 1, Mid flagellomeres of antenna. 2, Head, dorsal; arrow indicates micropore field. 3, Mesosoma, dorsal. 4, Mesosoma, lateral (tooth on mesopleuron is an artifact).

4. *Incastigmus ceromus* Finnamore
new species

Derivation of Name.—The species epithet is a derivation of two Greek words, *keros*, meaning horn, and *omos*, meaning shoulder, in reference to the peg-like pronotal lobe of this species.

Diagnosis.—This species has the greatest development of the pronotal lobe of any species in the genus. The blunt, peg-like pronotal lobe in both males and females separates *ceromus* from all other *Incastig-*

mus. In addition, the male pronotal lobe is brown, and the vertex has a linear micropore field between the compound eye and lateral ocellus; in the female the micropore field is an elongate triangle, the pronotal lobe is white, and notauli do not reach the posterior scutal margin, but attenuate on the posterior half of the scutum.

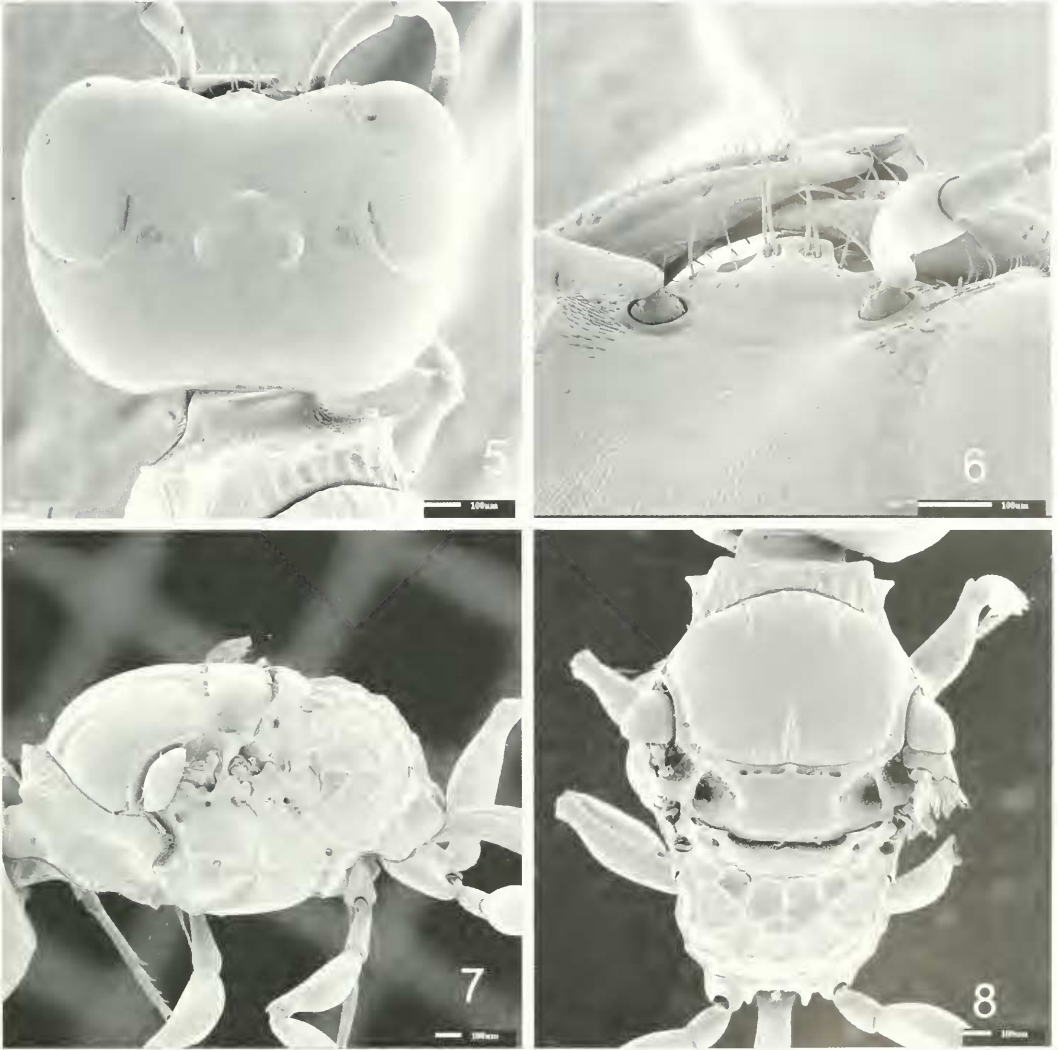
Male.—Length 4.5 mm. HEAD. Flagellomeres setose throughout, but without specialized ventral brush of setae, at most with a few specialized setae on the apices

of the flagellomeres; all flagellomeres with linear tyli; tylus on flagellomere XI imparting a slight asymmetrical appearance and blunt tip; flagellomere I length $1.2 \times$ maximum width as measured with tylus in profile; flagellomere X length $1.2 \times$ maximum width as measured with tylus in profile. Clypeus obscured by dense appressed setae which extend up frons along inner margins of eyes to approximately half height of scape; frons coarsely microsculptured, somewhat shiny anterior to ocelli and on vertex; punctures of upper frons and vertex sparse, irregular, 3 or more diameters apart; vertex, posterior to ocelli, microstriate; gena microsculptured, longitudinally striate on lower half, without ventral tooth or swelling; linear micropore field present between compound eye and lateral ocellus; without depression behind it; OOD $1.7 \times$ LOD. **MESOSOMA.** Transverse pronotal carina toothed at humeral angle and toothed ventrally; transverse pronotal groove longitudinally striate; pronotal lobe produced as blunt peg-like projection with strong anterior carina; lateral area of pronotum longitudinally striate. Scutum microsculptured, punctures small, sparse, irregular, 1 to many diameters apart in midregion; notauli extending to near scutal midlength, attenuating on posterior half, not reaching posterior margin; median scutal groove attenuating at admedian lines; posterior margin of scutum with a series of ridges extending to posterior quarter of scutum. Scutellum microsculptured, with median longitudinal sulcus and sparse scattered punctures. Sculpture of preomalar area not obscured by setae. Mesopleuron with microsculpture in dorsal region, shiny, weakly microsculptured ventrally; hypersternaulus, scrobal sulcus, and omaulus coarsely foveolate. Metapleuron microsculptured, with several longitudinal striae along posterior margin. Propodeum shiny, without microsculpture, areolate except small microstriate region adjacent to metapleuron; propodeal enclosure not

differentiated from lateral spheres. **METASOMA.** First tergum shiny with minute obscure punctures; succeeding terga with an oily sheen, punctures sparse, minute, obscure. Sterna shiny, with oily sheen, punctures sparse on basal sterna, not increasing in density until sternum VI where they are about 2 diameters apart in median region. **COLOR.** Black. Yellow-brown: palpi; mandibles, except apex; antenna, except apical flagellomeres; tegula; pronotal lobe; fore leg, except coxa; mid leg, except coxa; hind tarsus; apical sternum and tergum.

Female.—Length 4.0–5.0 mm. Similar to male except as follows: flagellomeres without tyli or specialized setae; flagellomere I length $1.5 \times$ maximum width; clypeus shiny, with weak microsculpture, punctures sparse in median region and 1 or more diameters apart; median clypeal lobe with 2 blunt teeth separated by a shallow notch, and with 2 narrowly separated subapical pits; sculpture of frons along inner margins of eyes not obscured by setae; upper frons and vertex more shiny than in male, microstriae not as evident; gena more shiny than in male, microsculpture weak ventrally, longitudinal striae on lower half present to absent; micropore field present as an elongate triangle between compound eye and lateral ocellus; OOD $2.2 \times$ LOD; scutum with weak microsculpture on posterior half, more shiny than in male; pronotal lobe white.

Material Examined.—2 ♂, 7 ♀. **HOLOTYPE MALE:** Peru: Carpish Mts. 40mi S. Tingo María 28-XII-1954 E.I. Schlinger & E.S. Ross (CASC). **Paratypes:** **PERU:** **Cuzco:** Río Urubamba 3km above Machu Picchu 2050m 18-IV-1983 C. & M. Vardy B.M. 1983–217 (1 ♀ BMNH). Machu Picchu museum 1,385m 11-14-VIII-1971 C. & M. Vardy B.M. 1971–533 (1 ♀ BMNH). Agua Caliente 21-28-XII-1983 (1 ♀ PMAE). **Huanuco:** Carpish Mts. 40mi S. Tingo María 28-XII-1954 E.I. Schlinger & E.S. Ross (3 ♀ CASC). 26mi E. Tingo María 10-XII-1954 1100m E.I. Schlinger & E.S. Ross (1 ♂



Figs. 5–8. *Incastigmus chincha* ♀. 5, Head, dorsal. 6, Clypeus, oblique dorsal view. 7, Mesosoma, lateral. 8, Mesosoma, dorsal.

CASC). **Pasco:** Oxapampa 2,200m 7-III-1979 M. Cooper B.M. 1979-216 (1♀ BMNH).

**5. *Incastigmus chincha* Finnamore
new species**

Figs. 5–8

Derivation of Name.—*Chincha* is a Quechuan term, meaning northern in reference to the distribution of this species in the northern part of South America.

Diagnosis.—Males of this species can be

recognized on the basis of the short median scutal groove, the dark, toothed pronotal lobe, and the absence of a depression posterior to the micropore field. Females can be recognized on the basis of the short median scutal groove, the dark, toothed pronotal lobe, and the acute lateral tooth on the apical margin of the clypeus.

Male.—Length 4.0 mm. **HEAD.** Flagellomeres without a brush of specialized setae or tyli; flagellomere I length 1.6 ×

apical width; flagellomere X length $1.3 \times$ apical width; flagellomere XI straight, cylindrical, apex conical. Clypeus obscured by dense appressed setae which extend up frons along inner margin of eyes to a point about twice the height of antennal socket. Frons microsculptured, punctures not evident; vertex shiny, with microsculpture and punctures scattered, sparse, many diameters apart; gena microsculptured, more shiny than vertex, sparse punctures more evident ventrally, without ventral tooth or swelling; lateral ocelli closer to each other than to compound eyes; OOD $1.5 \times$ LOD. **ME-SOSOMA.** Transverse pronotal carina toothed at humeral angle and toothed ventrally, transverse pronotal groove longitudinally striate, pronotal lobe with anterior carina ending in acute tooth; lateral region of pronotum longitudinally striate. Scutum microsculptured, somewhat shiny; punctures coarse, sparse, 3 or more diameters apart; notauli present anteriorly, attenuated posteriorly near scutal midlength, median groove present posteriorly, attenuated anteriorly, not reaching admedian lines; posterior margin of scutum with a series of short ridges parallel to, but shorter than, median groove. Scutellum microsculptured, with several punctures in median area, and a median longitudinal sulcus. Mesopleuron entirely microsculptured, apparently impunctate; preomalar area anteriorly with sculpture evident, setae sparse; hypersternaulus, scrobal sulcus, and omaulus coarsely foveolate. Metapleuron coarsely microsculptured with several longitudinal striae. Propodeum shiny, with weak microsculpture, coarsely areolate throughout, except area adjacent to metapleuron which is longitudinally striate; propodeal enclosure not differentiated from lateral spheres. **METASOMA.** Tergum I shiny, without microsculpture, punctures sparse, obscure. Terga beyond first tergum with oily sheen. Sterna shiny, with weak microsculpture;

punctures sparse, becoming increasingly dense on more posterior sterna; punctures of sternum VI about 1.5 diameters apart. **COLOR.** Black. Yellow-brown: palpi; mandible, except apically; antennae except apical flagellomeres; tegula; pronotal lobe; fore leg, except coxa; mid leg, except coxa; hind tarsus, hind trochanter, and apex of hind tibia; sterna VI to VIII.

Female.—Length 4.5–5.5 mm. Similar to male except as follows: flagellomere I length $1.8 \times$ apical width; clypeus shiny with punctures sparse, more than 5 diameters apart medially; median clypeal lobe reduced to a narrowly rounded protrusion, median teeth not evident and median lobe with a pair of subapical circular pits from which several long setae arise; acute lateral tooth present on clypeal margin, situated below antennal socket; frons along inner eye margin not obscured by appressed setae. OOD $2.2 \times$ LOD. Scutum and mesopleuron generally with less microsculpture, more shiny.

Material Examined.—2 ♂ 13 ♀. **HOLOTYPE FEMALE:** Venezuela: Aragua, Rancho Grande, Portachuelo 1100m 22-V-1981 J.L. Garcia & J. Clavijos (IZAV). **Paratypes:** **ECUADOR: Pichincha:** Tinalandia 800m II-1983 M. Sharkey & L. Masner (2♀ PMAE). 16km SE. Sto. Domingo 500m Tinalandia 4-14-VI-1976 S. & J. Peck (1♀ CNCI). **VENEZUELA: Aragua:** Rancho Grande, Portachuelo: 1100m 21-V-1981 J.L. Garcia & J. Clavijos (1♂ 2♀ IZAV); 1100m 22-V-1981 J.L. Garcia & J. Clavijos (3♀ IZAV). **Bolivar:** Kavanayen 20-X-1972 J. & B. Bechyne (1♀ IZAV). **Falcon:** [Cerro Galicia] 1500m 3-XII-1971 J. & B. Bechyne (1♀ IZAV). Cerro Galicia 1500m 19-XI-1971 J. & B. Bechyne (1♀ IZAV). **Lara:** Cubiro 6-V-1981 H.K. Townes (1♂ AEIC). **Merida:** Valle Grande 23-VII-1988 C. Porter & L. Stange (1♀ FSCA). **Trujillo:** La Mesa 26-VII-1966 J. & B. Bechyne (1♀ IZAV).

6. *Incastigmus hexagonalis* (Fox)
new combination

Figs. 9–12

Stigmus hexagonalis Fox 1897:379. Lectotype, female CMNH. Brazil: Chapada, Dec; examined.

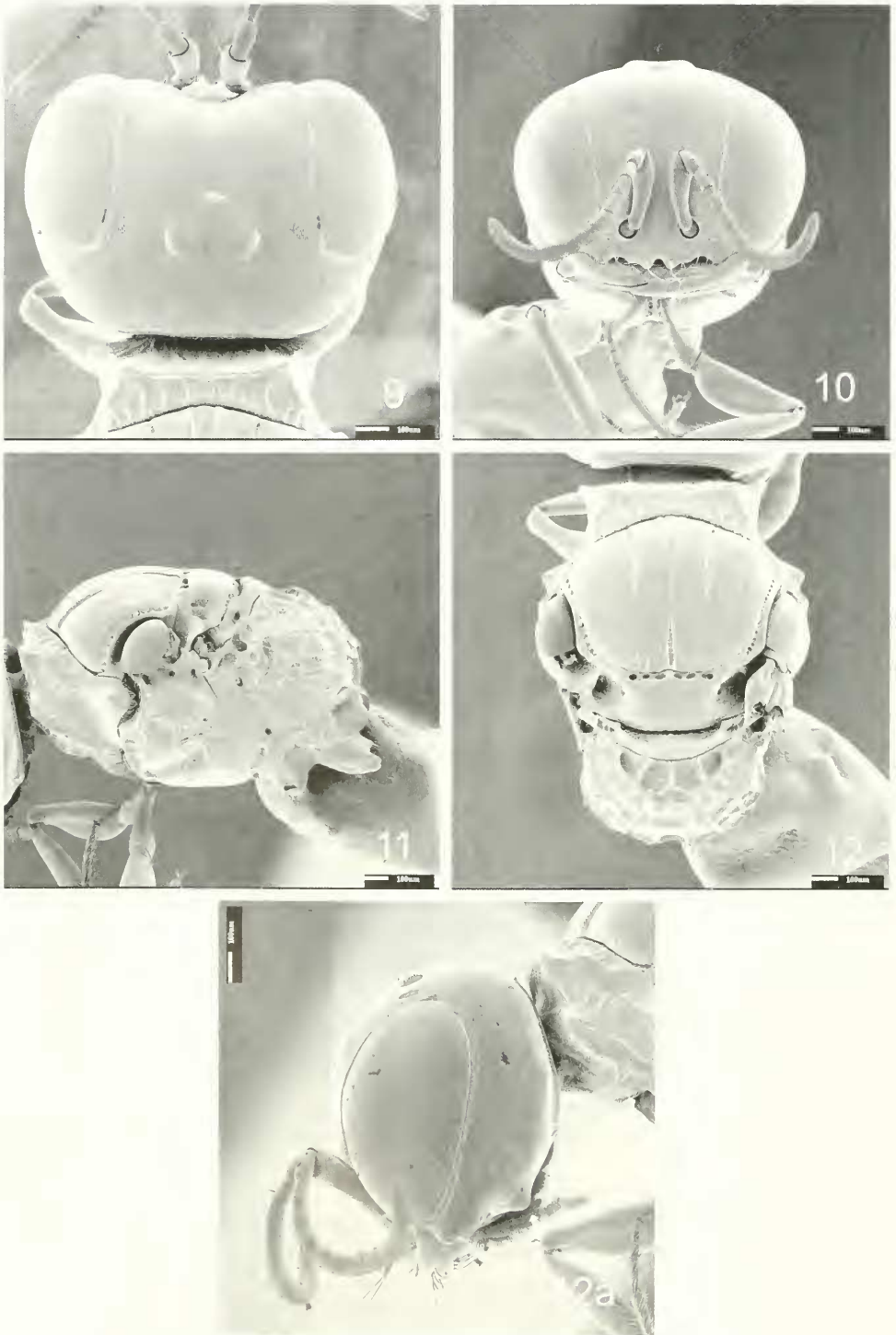
Diagnosis.—Both sexes can be easily recognized by the tooth-like projection on the ventral gena near the hypostomal carina. Females can be distinguished from female *prophorodontis*, which also have a small tooth-like swelling on the lower gena, by the presence of a pair of teeth on the median clypeal lobe; female *prophorodontis* have a truncate median clypeal lobe, without teeth.

Male.—Length 3.5–4.2 mm. HEAD. Flagellomeres without tyli, but with a ventral brush of setae; flagellomere I length $2.0 \times$ apical width; flagellomere X length $1.2 \times$ apical width; flagellomere XI straight, cylindrical, apex conical. Frons and clypeus with uniform microsculpture; vertex and gena shiny, with sparse punctures separated by 5 or more puncture diameters. Clypeus obscured by dense setae which extend up frons along eye margin to height of antennal socket. Gena shiny, without microsculpture, sparsely punctate, not striate, and with prominent ventral tooth-like swelling. Micropore field present as a discrete oval patch on vertex between lateral ocellus and compound eye, without a depression behind it. Ocelli closer to each other than to eyes. OOD $1.6 \times$ LOD. MESOSOMA. Transverse pronotal carina with prominent tooth at humeral angle and prominent ventral tooth; transverse pronotal groove with several longitudinal striae. Pronotal lobe tooth-like, conical. Pronotum laterally striate. Scutum shiny, with microsculpture anteriorly. Notauli well developed, present on anterior half of scutum. Median groove of scutum well developed and complete, or sometimes attenuated anteriorly between admedian lines, broadened posteriorly. Posterior margin of scutum with several short

parallel striae on each side of the median groove. Scutellum shiny, with weak microsculpture, generally impunctate, but a small group of punctures present laterally. Mesopleuron shiny, without microsculpture, impunctate. Preomalar area anteriorly with sparse setae. Hypersternaulus coarsely foveolate, often with only two large foveae. Scrobal sulcus and omalar sulcus coarsely foveolate. Metapleuron weakly microsculptured on ventral half, otherwise shiny, impunctate. Propodeum shiny, without microsculpture; propodeal enclosure and lateral spheres not differentiated, coarsely areolate throughout, except basal area adjacent to metapleuron which is smooth and shiny, without sculpture. METASOMA. Terga shiny, without microsculpture; punctures sparse, obscure. Sterna shiny; punctures sparse, weak. COLOR. Black. Yellow-brown: antenna, except dorsal apex of flagellum; mandible, except apex; palpi; tegula; fore and mid legs, except coxae; hind coxal apex, hind trochanter, hind tibia ventrally, and hind tarsus.

Female.—Length 4.0–5.25 mm. Similar to male except as follows: flagellomere I length $2.25 \times$ apical width. Clypeus shiny, without appressed setae, sparsely to densely punctate; median clypeal lobe with a pair of teeth separated by a deep U-shaped emargination; the base of each tooth bears a large pit from which arises an elongate seta. Lower gena with a prominent tooth-like swelling. OOD $2.4 \times$ LOD. Occipital carina simple, not foveolate. Color as in male for the dark form, except pronotum, scutum, scutellum, and upper mesopleural area, orange-red in light form.

Material Examined.—3 ♂, 28 ♀. COLOMBIA: Caqueta: Yuruyaco, 73km SW. Florencia (BMNH). Meta: Río Duda (BMNH). Putumayo: Moco. (BMNH); Mocoa, 8mi S. Puerto Assis 350m (BMNH). Villa Garzon (BMNH). ECUADOR: Morona: Macas, 6km E. Santiago, Cord. Cutucu (BMNH). Napo: Limoncocha (on Río



Figs. 9–12. *Incastigmus hexagonalis* ♀. 9, Head, dorsal. 10, Head, frontal. 11, Mesosoma, lateral. 12, Mesosoma, dorsal. 12a, Head, lateral, with arrow indicating genal tooth.

Napo) (1♀ FSCA). Misahualli (1♀ PMAE). Tena (1♀ PMAE). **PERU:** [Chanchamayo] (BMNH). **Colonia:** Junin (BMNH). La Merced, 18 mi NE. Perene, Río Perene (1♀ CASC). **Huanuco:** Tingo María (BMNH). **Junin:** Paratuchali (1♀ PMAE). Satipo (BMNH). **Loreto:** Iquitos, Barillal (1♀ PMAE). **BRAZIL:** [Chapada] (3♀ CMNH). [Corumba] (1♀ CMNH). [Santarem] (1♀ USNM). **Mato Grosso:** 12°50'S 51°47'W (BMNH). Cerrado (BMNH).

7. *Incastigmus ictericornis* Finnamore
new species

Figs. 13–20

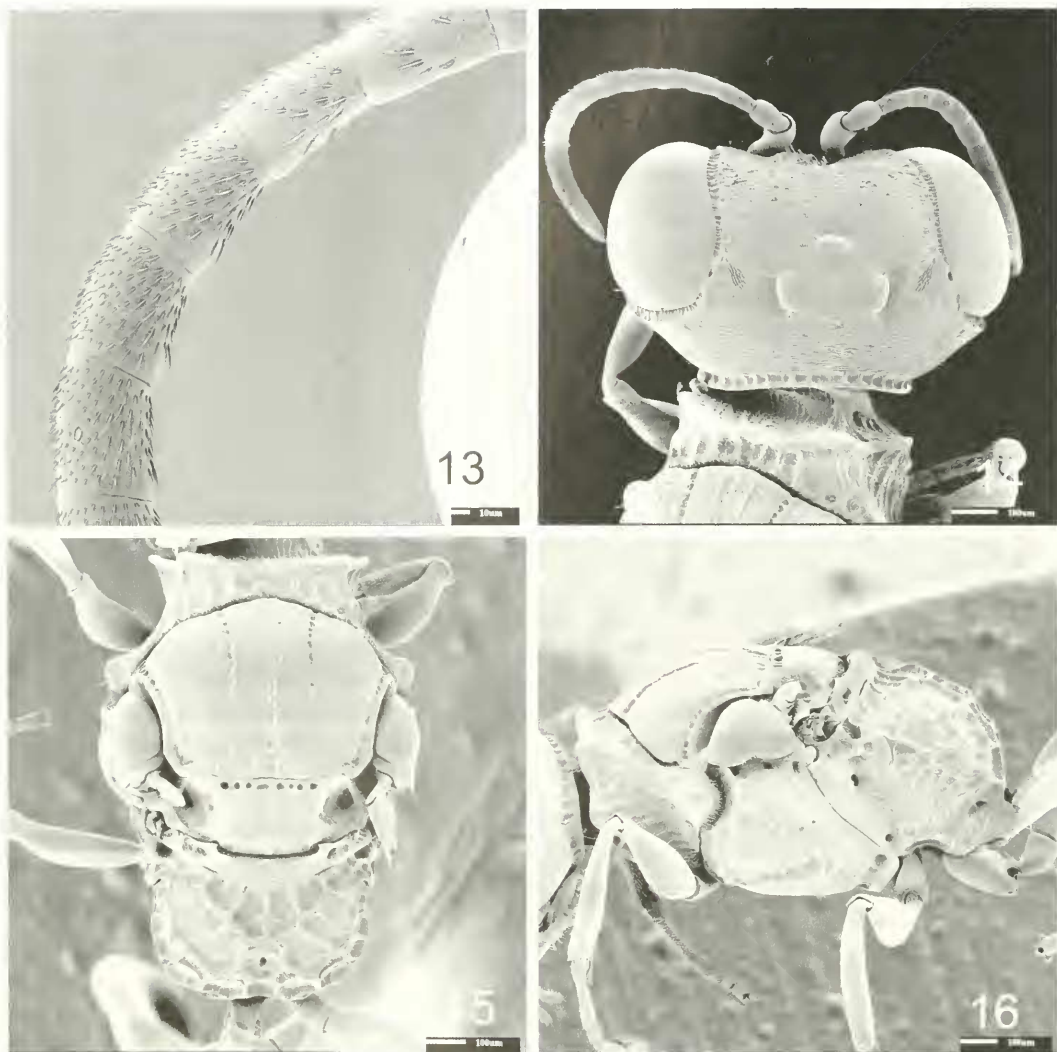
Derivation of Name.—The name *ictericornis* is derived from the Greek *ikterikos*, meaning yellowish, and the Latin *cornu*, meaning horn, in reference to the yellowish antenna of this species.

Diagnosis.—Females are easily distinguished from other species by the following combination of characters: the median lobe of the clypeus has a subapical semi-circular depression with several long setae, the pronotal lobe is rounded, and the scutal punctures are normal, not striato-punctate. Males are not easily separated from other species, but the following characters will be of some assistance: the flagellum without ventral brush of setae or tyli, and flagellomeres I and X length less than $2 \times$ apical width, the gena without ventral tooth or swelling, mesosoma black, pronotal lobe rounded, median groove of scutum reaching admedian lines, and tergum I of metasoma shiny, without microsculpture.

Male.—Length 4.0–4.5 mm. **HEAD.** Flagellomeres without tyli or specialized setae ventrally; flagellomere I length $1.6 \times$ apical width; flagellomere X length $1.3 \times$ apical width; flagellomere XI straight, cylindrical, apex conical; clypeus obscured by dense appressed setae which extend up frons along inner eye margin to half the height of scape; frons microsculptured, punctures obscure; vertex shiny, weakly microsculptured, punctures irregular, 2 or

more diameters apart; gena without ventral tooth or swelling, microsculptured, punctures obscure and scattered; micropore field present as an oval patch between compound eye and ocellus, without depression behind it; lateral ocelli closer to each other than to compound eye; OOD $1.4 \times$ LOD. **MESOSOMA.** Transverse pronotal carina toothed at humeral angle, and toothed ventrally; transverse pronotal groove longitudinally striate; pronotal lobe rounded, without anterior carina; lateral region of pronotum longitudinally striate. Scutum microsculptured throughout, punctures irregular, 1 or more diameters apart; notauli usually attenuating about scutal midlength, in some specimens notauli reach posterior quarter of scutum; median scutal groove reaching admedian lines. Scutellum microsculptured, with median longitudinal sulcus, and several punctures laterally. Preomalar area anteriorly with sparse setae that do not obscure sculpture. Mesopleuron microsculptured on hypopleural area, shiny with less microsculpture on ventral regions; hypersternaulus, scrobal sulcus, and omaulus coarsely foveolate; mesopleuron microsculptured, with several short longitudinal striae along posterior margin. Propodeum shiny, weakly microsculptured, coarsely areolate over most of its surface, except area adjacent to metapleuron which is shiny, without sculpture; propodeal enclosure not differentiated from lateral spheres. **METASOMA.** First tergum shiny, without microsculpture, succeeding terga with an oily sheen, sparsely punctate with punctures many diameters apart. Sterna similar in sculpture to terga with punctures slightly more dense on posterior sternum and 3 or more diameters apart in lateral regions. **COLOR.** Black. White: mandible, except apex; pronotal lobe. Yellow-brown: palpi; antennae; tegula; fore leg, except coxa and femur; mid leg, except coxa and femur; hind tarsus.

Female.—Length 4.0–5.0 mm. Similar to



Figs. 13–16. *Incastigmus ictericornis* ♂. 13, Mid flagellomeres of antenna. 14, Head, dorsal. 15, Mesosoma, dorsal. 16, Mesosoma, lateral.

male except as follows: flagellomere I length $1.8 \times$ apical width; clypeus shiny, without microsculpture, or with weak microsculpture medially; clypeal punctures 1–3 diameters apart medially; median clypeal lobe with 2 teeth separated by a shallow emargination, long setae arising from subapical semicircular depression. Inner eye margin sparsely setose with sculpture not obscured; OOD $2.0 \times$ LOD.

Material Examined.—28 ♂, 7 ♀. HOLO-

TYPE MALE: Peru: Madre de Dios: Pto. Maldonado 1-11-I-1984 L. Huggert (PMAE). Paratypes: **ARGENTINA**: Salta: Oran, Abra Grande 18-25-X-1968 C. Porter (3♂ MCZC); 18-IV-5-V-1969 C. Porter (1♂ MCZC). **Tucuman**: Horco Molle, nr. Tucuman 15-21-V-1966 L. Stange (1♂ IMLA). **BOLIVIA**: La Paz: Cavinás, Río Beni VII W.M. Mann Mulford Bio. Expl. 1921–22 (1♀ USNM). **BRAZIL**: Amazonas: [Jeffé] 7-IX-1904 Ducke (1♂ MPEG). Bahia: Itabuna CEPEC XI-1978 F.P. Ben-

ton (2♂ BMNH). **Espirito Santo:** Linhares, XI-1967 F.M. Oliveira (1♂ PMAE). **Minas Gerais:** Aguas Vermelhas 15°45'S 41°28'W 800m XII-1983 Alvarenga (1♂ AEIC). Barbacena 26-X-1905 Ducke (1♂ MPEG). S. Caraca, S Barbara III-1971 F.M. Oliveira (2♀ PMAE). **Rio de Janeiro:** Represa Rio Grande, Guanabara V-1972 M. Alvarenga (2♂ 1♀ PMA). Rio de Janeiro VIII (2♂ USNM). Teresopolis 9-III-1966 H. & M. Townes (1♀ AEIC). **Rondonia:** [Ft.] Principe [da Beira?] Rio Guapore (1♂ CMNH). **Santa Catarina:** Nova Teutonia, I-1968 F. Plaumann (1♀ MCZC). **São Paulo:** São Paulo (1♂ ZMUM). **ECUADOR:** [Bucay] 1000' 7-X-1922 F.X. Williams (1♂ BPBM). **PARAGUAY:** [no locality] Fiebrig (1♂ HNHM). **Cordillera:** Col. [Colonia] Piareta XII-1971 Pena (2♂ IIES). **PERU:** **Huanuco:** Tingo Maria 1km E. 2-VIII-1971 2000' P.S.&H.L. Broomfield B.M. 1971-486 (1♀ BMNH). **Madre de Dios:** Pto. Maldonado 1-11-I-1984 L. Hugert (6♂ PMAE).

8. *Incastigmus ignithorax* Finnamore new species

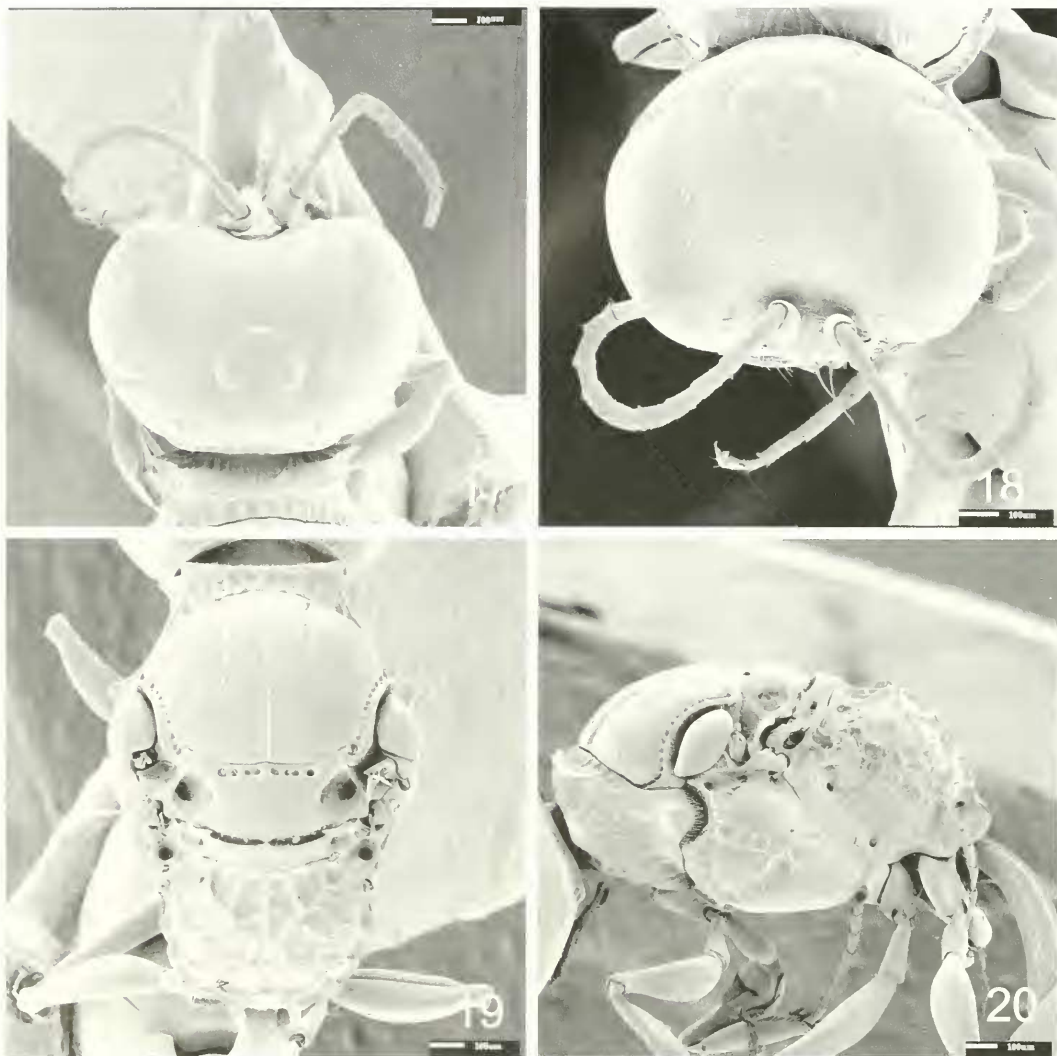
Derivation of Name.—The name *ignithorax* is derived from the Latin *ignis* meaning fire and the Greek *thorax*, in reference to the orange-yellow thorax found in members of this species.

Diagnosis.—*Incastigmus ignithorax* differs from all others in the genus by the orange-yellow thorax, the short (does not reach scutal midlength) posterior median groove on the scutum; and the quadrilobed clypeal apex. Other species with an extensively light-colored thorax include *pyrrhopyxis* which has a dark propodeum, a bidentate clypeus, and a median groove on the scutum extending to the admedian lines, *thoracicus* which lacks a median groove on the scutum, and *hexagonalis* which has a tooth-like projection on the lower gena.

Male.—Unknown.

Female.—Length 5 mm. HEAD. Flagellomere 1 length 2 × maximum width.

Clypeus shiny, without appressed setae, sparsely punctate, sparsely setose; clypeal apex with 4 teeth, median teeth more strongly developed than lateral teeth; the base of each median tooth bears a pit from which arises a long seta. Head microsculptured but not uniformly, scapal basin more densely microsculptured than vertex; punctures sparse, more or less regular and separated by over 5 puncture diameters. Micropore field present as an oval patch between hind ocellus and compound eye. Gena shiny, obscurely microsculptured, with slight ventral swelling, sparsely and regularly punctate. OOD 2.6 × LOD. MESOSOMA. Transverse pronotal carina toothed at humeral angle and toothed ventrally; transverse pronotal groove with several longitudinal striae; pronotal lobe carinate, appearing somewhat toothed; pronotum laterally with several longitudinal striae. Scutum shiny, weakly microsculptured; notauli developed anteriorly, not reaching scutal midlength; median scutal groove short, restricted to posterior scutum, not reaching midlength and not reaching admedian lines; ridges along posterior margin of scutum occasionally reaching midlength; scutal punctures relatively strong, better developed on lateral areas, separated by 3 or 4 puncture diameters. Scutellum shiny, with weak microsculpture, several punctures present laterally. Mesopleuron shiny, without microsculpture; punctures sparse, several present on the sternopleural region. Preomalar area anteriorly with sparse setae that do not obscure sculpture beneath. Hypersternaulus, scrobal sulcus, and omaulus coarsely foveolate. Metapleuron microsculptured, dull, impunctate. Propodeum shiny, coarsely areolate throughout; area adjacent to metapleuron microstriate; propodeal enclosure not differentiated from lateral spheres. METASOMA. Terga shiny, without microsculpture; punctures sparse, obscure. Sterna shiny; punctures sparse on anterior sterna, relatively dense



Figs. 17–20. *Incastigmus ictericornis* ♀. 17, Head, dorsal. 18, Face, oblique dorsal. 19, Mesosoma, dorsal. 20, Mesosoma, lateral.

on more posterior sterna where they are 1 to 2 puncture diameters apart. **COLOR.** Black. Orange-yellow: mandible, except apex; antenna; palpi; mesosoma, except posterior of mesosternum and metasternum; legs, except outer surface of hind tibia; metasoma occasionally on dorsal petiole and apical sterna.

Material Examined.—5 ♀. **HOLOTYPE** FEMALE: Panama Prov. 6km N. Capira (Cerro Campana) 8-IV-1981 R.W. Brooks (SEM). **Paratypes:** **COSTA RICA:** **Heredia:** F. La

Selva 3 km S. Pto. Viejo 10°26'N 84°01'W, 3-VII-1986 H.A. Hespeneide (1♀ PMAE). **PANAMA:** **Canal Zone:** Barro Colorado 24-VII-1924 N. Banks (1♀ MCZC). **Panama:** 6km N. Capira (Cerro Campana) 8-IV-1981 R.W. Brooks (2♀ SEMC).

9. *Incastigmus inti* Finnamore

Figs. 21–28

Incastigmus inti Finnamore 1995: 235. Holotype, male PMAE. Ecuador: Napo Prov.: Tena 15-II-1986 A.T. Finnamore sweep; examined.

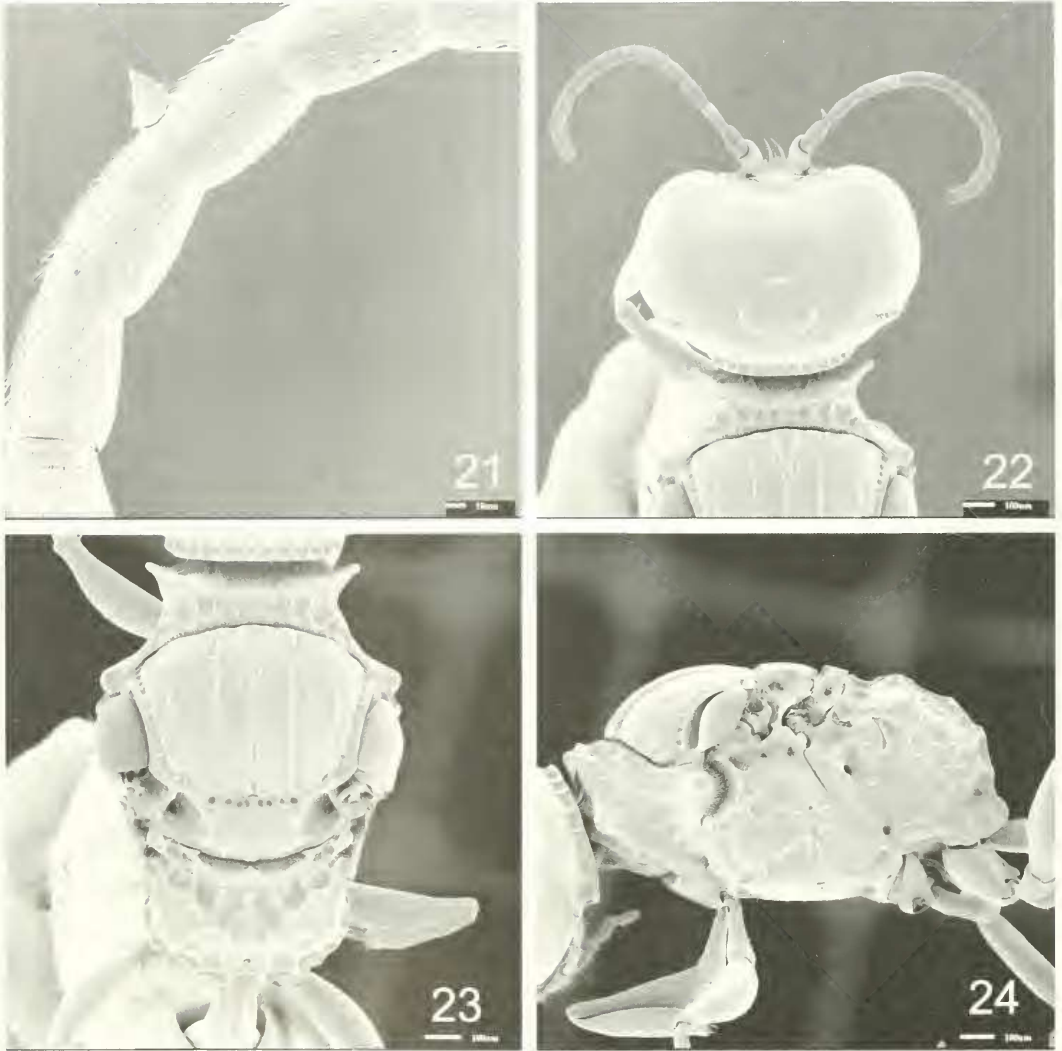
Diagnosis.—The following combination of characters will separate this species from all others in the genus: Micropore field of vertex oval; scutum with median groove and notauli complete from anterior to posterior margins, without regular longitudinal ridges between grooves; pronotal lobe white, rounded and conical; male antenna with tylus on flagellomere XI; female clypeus with 2 elongate setae arising from 2 narrowly separated subapical pits on median clypeal lobe; female upper frons shiny, without microsculpture anterolaterally to mid ocellus.

Male.—Length 2.5–4.0 mm. HEAD. Flagellomeres without specialized setae; flagellomeres II to XI with tyli, that on flagellomere XI imparting an asymmetrical shape, apex conical; flagellomere I length $2.2 \times$ apical width; flagellomere X length $1.4 \times$ apical width. Head microsculptured on frons, vertex shiny; punctures sparse; clypeus obscured by dense appressed setae which extend up frons along inner eye margin little more than height of antennal socket; gena microsculptured, sparsely punctate, not carinate, without ventral tooth or swelling; micropore field present as an oval patch between compound eye and lateral ocellus; without depression behind it; lateral ocelli closer to each other than to compound eyes; OOD $1.7 \times$ LOD. MESOSOMA. Transverse pronotal carina toothed laterally and toothed ventrally; transverse pronotal groove longitudinally striate; pronotal lobe conical, apex rounded, without anterior carina; lateral area of pronotum with longitudinal striae. Scutum variable, entirely microsculptured to weakly microsculptured with shiny patches; notauli complete to posterior margin; median scutal groove complete to anterior margin; punctures sparse. Scutellum microsculptured, with several punctures on lateral region near midlength. Preomaular area with sparse setae that do not obscure underlying sculpture. Mesopleuron variable, from entirely microsculptured to weakly shiny with reduced microsculp-

ture, sparsely punctate to impunctate. Hypersternaulus, omaulus, and scrobal sulcus foveolate. Metapleuron usually microsculptured with several short, weak, longitudinal striae on posterior margin. Propodeum shiny, generally without microsculpture, coarsely areolate throughout, except shiny, unsculptured area adjacent to metapleuron; propodeal enclosure not differentiated from lateral spheres. METASOMA. First tergum shiny, without microsculpture, punctures minute and obscure; sterna weakly microsculptured, punctures sparse and many diameters apart on sternum II; punctures increasing in density to sternum VI where minute punctures near lateral midlength are about 1 diameter apart. COLOR. Black. White: mandible, except apex; pronotal lobe. Yellow-brown: palpi; mandible subapically; antenna; tegula; fore leg, except coxa; mid leg, except coxa; hind trochanter and tarsus; metasomal sternum VIII.

Female.—Length 3.0–4.25 mm. Similar to male except as follows: antenna without tyli, flagellomere X length $1.25 \times$ apical width; clypeus shiny, without microsculpture, sparsely punctate but occasionally moderately dense punctures grouped in median area; median clypeal lobe with 2 long setae arising from 2 narrowly separated, subapical pits; apex of clypeal lobe truncate, without teeth. Scutum with several irregular ridges between notauli and median grooves; color as above, but variable to dark antennal flagellum and dark femora.

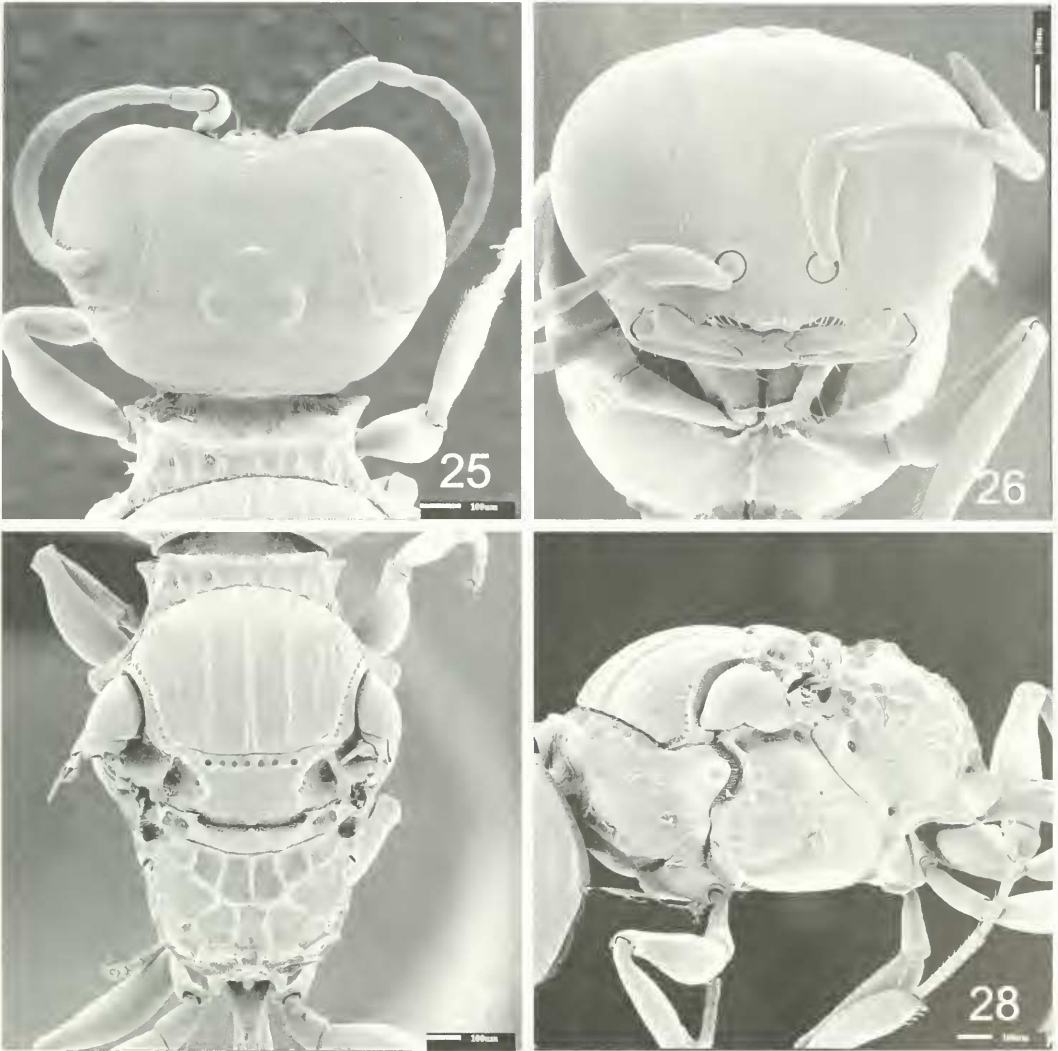
Material Examined.—258 ♂, 109 ♀. **BOLIVIA:** [Las Juntas] (1 ♀ CMNH). La Paz: Chulumani 1,700m (2♂ 5♀ BMNH). Coroico-Chulumani (1 ♀ MCZC). Coroico, Sta. Barbara 1,100m (1 ♀ PMAE). Tumpasa (1♂ USNM). Yungas, 13km S. Caranavi 850m (2 ♀ PMAE). **BRAZIL:** Mato Grosso: Itaum (3 ♀ AEIC). Para: Belem IPEAN (1 ♀ CNCI). **COLOMBIA:** Caqueta: Florencia 480m (1 ♀ BMNH). Yuruyaco, 73km SW. Florencia (2♂ 1 ♀ BMNH).



Figs. 21–24. *Incastigmus inti* ♂. 21, Mid flagellomeres of antenna. 22, Head, dorsal. 23, Mesosoma, dorsal. 24, Mesosoma, lateral.

Putumayo: Mocoa (10♂ 8♀ BMNH). Villa Garzon, 8mi S. Mocoa (1♂ BMNH). **Vaupes:** Mitu (1♂ BMNH). **ECUADOR:** [Mera] (1♂ BPBM). **Carchi:** Chical 1,250m (1♀ CMNH). **Napo:** Coca (1♂ AEIC). Coca & Napo Rivers (1♂ AEIC). Limoncocha, 250m (2♂ 2♀ CNCI). Puerto Misahualli (26♂ 5♀ PMAE). Muyuna, 5km W. Tena (1♀ BMNH). Santa Cecilia (1♂ USNM). Tena (1♂ BMNH, 1♀ CNCI, 18♂ 8♀ PMAE). Tena-Puyo Hwy (1♂ PMAE). **Pastaza:** Puyo 960m (15♂ BPBM). Puyo,

22km SW. (1♂ 1♀ CNCI). Puyo, 23km SE. (1♀ USNM). Puyo, 44km S. (5♂ 2♀ USNM). Puyo, 18km N. (1♂ RNHM). **Pichincha:** Tinalandia 800m (2♂ PMAE). **Zamora-Chinchipe:** Cumbaratza (1♂ AEIC). Río Jumboe (5♂ 2♀ MCZC). Zamora (1♂ AEIC). **PARAGUAY:** **Cordillera:** Piareta (1♂ IIES). **Guaíra:** W. Villarrica, Caballero (1♂ IIES). **PERU:** **Cuzco:** Agua Caliente (8♂ 1♀ PMAE). Machu Picchu (1♀ AEIC); Quincemil, 750m near Marcapata (8♂ 3♀ AEIC). **Huanuco:** Ca-



Figs. 25–28. *Incastigmus inti* ♀. 25, Head, dorsal. 26, Face. 27, Mesosoma, dorsal. 28, Mesosoma, lateral.

yumba, 35km S. Tingo María 800m (1♀ BMNH). Las Palmas, 5mi SW. 1,000m (2♂ CASC). Las Palmas 10mi SW. 1,000m (4♀ CASC). Monson Valley, Tingo María (13♂ 10♀ CASC). Tingo María (1♀ BMNH, 20♂ 4♀ PMAE). Tingo María 26mi E. 1,100m (1♀ CASC). Tingo María, 67 mi E. (1♀ CASC). Tocache (4♂ 1♀ PMAE). **Junin:** Colonia Perene, Río Perene 18mi NE. La Merced (2♂ 1♀ CASC). Paratuchali (10♂ 4♀ PMAE). Satipo (21♂ 7♀ PMAE). **Lima:** Magdalena [del Mar?] [Lima?] (1♀ USNM). **Loreto:** Iquitos, NE.

Río Nanay (10♂ PMAE). Iquitos, Gransa (2♂ PMAE). Iquitos, Quisto Cocha (1♂ PMAE). Iquitos, Barilla (1♂ PMAE). **Madre de Dios:** [Laberinto] 70km W. Puerto Maldonado on Río Madre de Dios (1♀ PMAE). Puerto Maldonado (50♂ 14♀ PMAE); Tambopata Reserve 50km S. Puerto Maldonado on Río Tambopata (1♂ 1♀ PMAE). Ucayali: [Tacshitea] 88km N. Pulcalpa jct Río Callaria & Río Ucayali (1♂ PMAE). **VENEZUELA:** **Zulia:** El Tucuco, 45km SW. Machiques (1♀ USNM).

10. *Incastigmus iphis* Finnamore
new species
Figs. 29–36

Derivation of Name.—*Iphis* is a Greek term referring to a Cretian girl who was changed to a man, in reference to the difficulty encountered in associating the females with the males of this species.

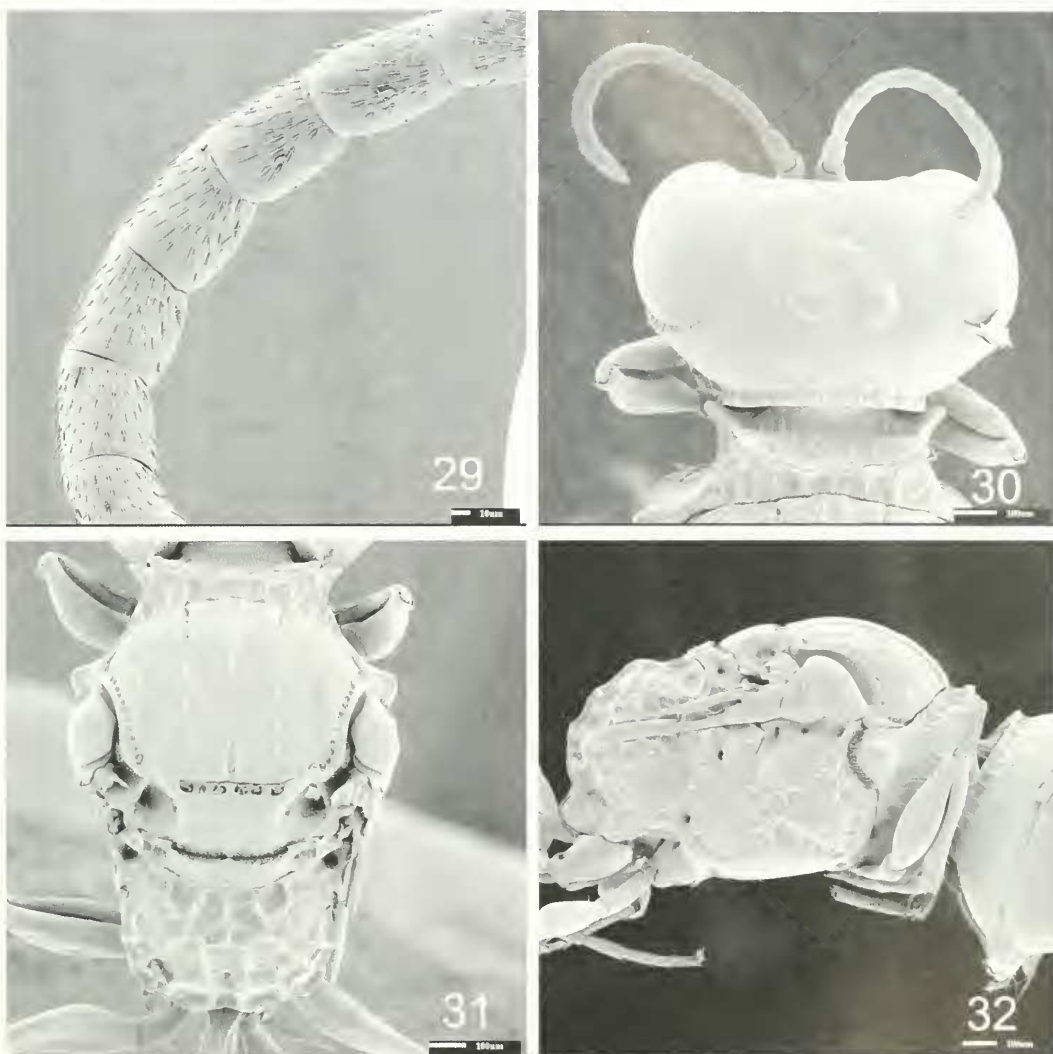
Diagnosis.—Males and females of this species can be distinguished by the following characters: flagellomeres without setal brush, apical flagellomere unmodified, micropore field round, microsculpture of vertex continuous with that of frons, mesosoma black, pronotal lobes white and rounded, notauli and median scutal grooves complete.

Male.—Length 3.5–4.5 mm. HEAD. Flagellomeres ventrally without specialized setae; tyli present on flagellomeres I through VI or VII; tyli appear as a yellow fold on the ventral surface; flagellomere XI symmetrical, cylindrical, apex conical; flagellomere I length $1.5 \times$ apical width; flagellomere X length $1.5 \times$ apical width. Clypeus obscured by dense appressed setae which extend up frons along inner margin of eyes to about half length of scape; microsculpture of frons continuous with that of vertex, punctures of frons sparse, more or less regular, 3 or more diameters apart; oval micropore field present between compound eye and lateral ocellus, without depression behind it; gena microsculptured, sparsely punctate, shiny ventrally, without tooth or swelling in ventral region; OOD $1.8 \times$ LOD. MESOSOMA. Transverse pronotal carina toothed at humeral angle and toothed ventrally; transverse pronotal groove with coarse longitudinal striae; pronotal lobe roundly conical, without anterior carina. Scutum microsculptured, more or less shiny posteriorly; punctures sparse, small, scattered between irregular grooves and ridges of surface; notauli complete to posterior margin of scutum; median scutal groove contiguous with admedian lines.

Scutellum microsculptured with several lateral punctures and a poorly defined median sulcus. Preomalar area anteriorly with sparse setae, sculpture visible; mesopleuron entirely microsculptured; hypersternaulus, scrobal sulcus, and omalar coarsely foveolate; metapleuron microsculptured, with several short longitudinal striae along posterior margin. Propodeum with weak microsculpture, coarsely areolate, except small shiny region near metapleuron; propodeal enclosure not differentiated from lateral spheres. METASOMA. Tergum I shiny with minute, obscure punctures; succeeding terga with an oily sheen, punctures minute, obscure; sterna with an oily sheen, punctures slightly increasing in density on more posterior sterna; sternum VI with a narrow median longitudinal impunctate area, punctures about 1 to 2 diameters apart immediately lateral to this area. COLOR. Black. White: pronotal lobe. Yellow-brown: palpi; mandible, except apex; antenna ventrally, and dorsally to flagellomeres IV or V; tegula; fore leg, except coxa and femur dorsally; mid leg, except coxa and femur; hind trochanter and hind tarsus.

Female.—Length 3.5–5 mm. Similar to male except as follows: flagellomere I length $1.7 \times$ apical width; clypeus shiny, sparsely punctate, punctures over 3 diameters apart in median clypeal area; median clypeal lobe truncate, without teeth; long setae arising from pair of subapical pits; frons along inner margin of eye with sparse setae that do not obscure sculpture; color as in male except hind tibia yellow-brown dorsally.

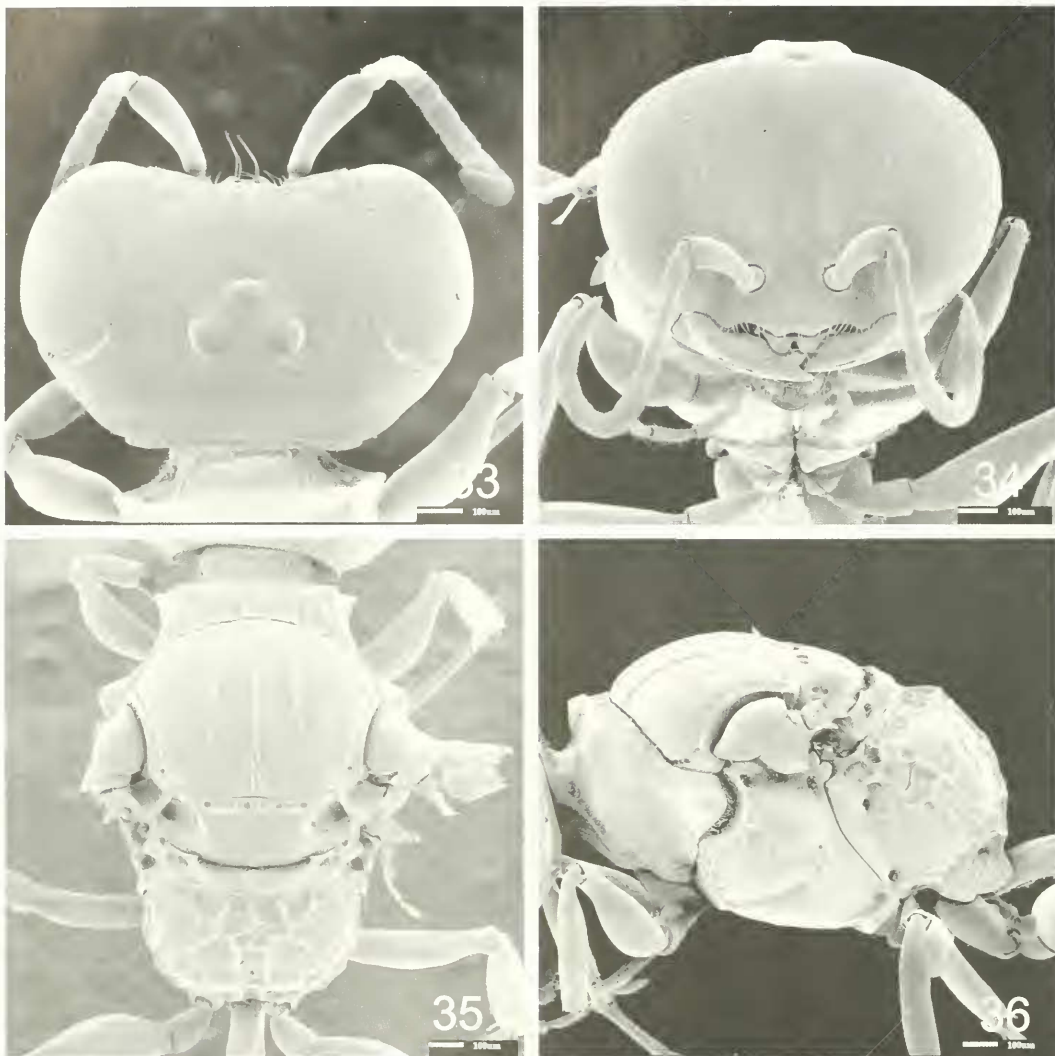
Material Examined.—54 ♂, 55 ♀. HOLOTYPE MALE: Brazil: Bahia, Itabuna, CEPEC 23-XI-1983 F.P. Benton (BMNH). Paratypes: **BOLIVIA: La Paz:** Chulumani 1,700m 27-III-1979 M. Cooper B.M.1979–216 (1 ♀ BMNH). **BRAZIL: Bahia:** Itabuna, CEPEC: (various dates) 1982–1984 F.P. Benton (33♂ 45♀ BMNH). **Goiás:** Jataí XI-



Figs. 29–32. *Incastignus iphis* ♂. 29, Mid flagellomeres of antenna. 30, Head, dorsal. 31, Mesosoma, dorsal. 32, Mesosoma, lateral.

1972 F.M. Oliveira (1♂ 1♀ CNCI). **Mato Grosso:** Itaum Dourados III-1974 M. Alvarenga (3♂ AEIC, 3♂ 1♀ CNCI, 2♂ PMAE). **Rio de Janeiro:** Repressa Rio Grande, Guanabara VII-1972 M. Alvarenga (1♂ CNCI). **São Paulo:** São Paulo, [Rua?] Teodora Sampaio: XI-1977 M. Alvarenga (1♂ AEIC, 1♀ IIES); XII-1977 M. Alvarenga (2♂ CNCI); VIII-1975 Oliveira (1♀ PMAE). Sao Vicente 30-X-1961 N.L.H. Krauss (1♂ USNM). **PARAGUAY:** Can-

indeyu: SW. Salto del Guaira 8-XII-1971 (1♀ CNCI). **Cordillera:** [Colonia] Pirareta XII-1971 Pena (3♂ IIES). **Guaira:** W. Villarrica Caballero I-1972 Pena (1♂ 2♀ IIES). **San Pedro:** Río Ypane Corroero XII-1983 M.A. Fritz (1♂ IIES). **PERU:** **Cuzco:** Quilabamba 1700m 23-27-XII-1983 A.T. Finnamore (1♀ PMAE). Quincemil, 750m near Marcapata IX-1962 Luis Pena (1♂ AEIC). **Loreto:** Iquitos, Quisto Cocha 5-II-1984 L. Huggert (1♀ PMAE).



Figs. 33–36. *Lucastigmus iphis* ♀. 33, Head, dorsal. 34, Face. 35, Mesosoma, dorsal. 36, Mesosoma, lateral.

11. *Lucastigmus kunkopteryx* Finnamore new species

Figs. 37–40

Derivation of Name.—The name *kunkopteryx* is derived from the Quichuan *kunka*, meaning collar; and the Greek *pteryx*, meaning wing, referring to the flattened, wing-like tooth on the pronotal lobe of this species.

Diagnosis.—Both males and females of this species can be recognized by the flattened, wing-like, tooth on the pronotal lobe in most specimens, the complete me-

dian scutal groove, and the oval micro-pore field on the vertex. This species is unusually variable and probably represents a complex of several species, but an insufficient number of specimens exist to resolve the question of variation.

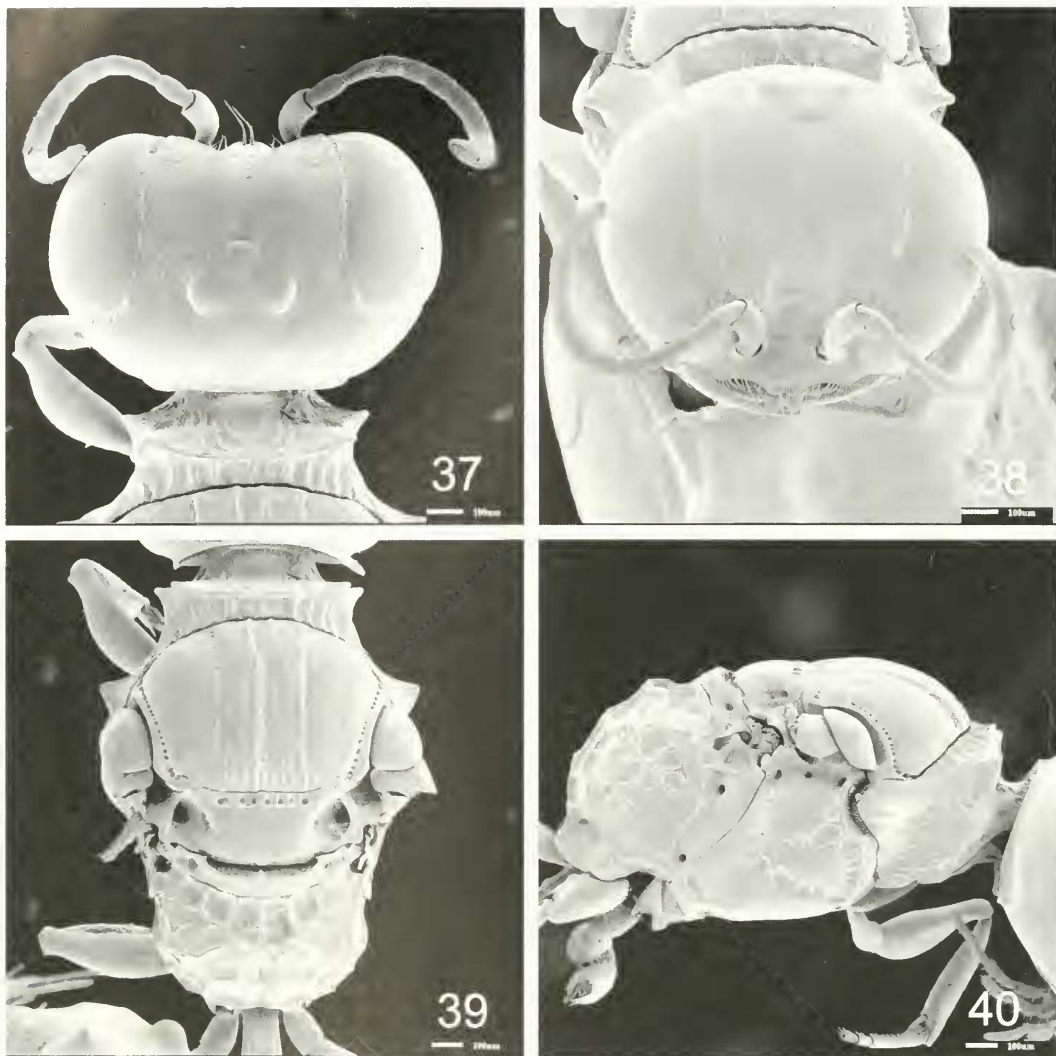
Male.—Length 4 mm. HEAD. Flagellomeres ventrally with a narrow longitudinal asetose region; obscure tyli present on flagellomeres III to VI or VIII; flagellomere I length $1.8 \times$ apical width; flagellomere X length $1.8 \times$ apical width; flagellomere XI straight, cylindrical, apex conical. Clypeus

obscured by dense appressed setae which extend up frons along inner margin of eyes to about half the height of scape; frons microsculptured; vertex usually shiny, sometimes microsculptured and not well distinguished from frons; punctures on vertex sparse, irregular, 3 or more diameters apart; gena microsculptured, obscurely punctate, without ventral tooth or swelling; some specimens with irregular longitudinal microstriae arising from occipital carina that extend to compound eye; micropore field present as an oval patch between compound eye and ocellus; without depression behind it; lateral ocelli closer to each other than to compound eyes; OOD $1.8 \times$ LOD. MESOSOMA. Transverse pronotal carina tooth-like at humeral angle, sometimes sharply toothed, and ventrally toothed; transverse pronotal groove longitudinally striate; pronotal lobe somewhat flattened dorsally, often flattened ventrally; anterior carina on pronotal lobe continuous to apex and often continued posteriorly; pronotal lobe in several specimens conical, produced, and sharply pointed; lateral area of pronotum longitudinally striate. Scutum in most specimens microsculptured on anterior half, shiny without microsculpture on posterior half; some specimens microsculptured throughout; in most specimens scutum irregularly ridged or striatopunctate; several specimens without scutal striae; scutal punctures sparse, irregular, a few to many diameters apart; notauli extending to posterior margin of scutum or attenuating on posterior half; median scutal groove extending to and between admedian lines. Scutellum microsculptured with several punctures laterally, and median longitudinal sulcus absent or poorly developed. Preomaular area anteriorly with sparse setae that do not obscure sculpture. Mesopleuron shiny, often with weak microsculpture dorsally; posterior half microstriate; hypersternaulus, scrobal sulcus, and omaulus foveolate. Metapleuron microsculptured, several short longi-

tudinal striae along border with propodeum. Propodeum shiny, weakly microsculptured, coarsely areolate over most of surface except small shiny area adjacent to metapleuron; propodeal enclosure not differentiated from lateral spheres. METASOMA. First tergum shiny, without microsculpture; succeeding terga with an oily sheen, punctures minute, sparse and obscure; sterna similar to terga, punctures generally more evident; sternal punctures reaching maximum density on sternum V where they are about 1 to 2 diameters apart. COLOR. Black. White: usually mandible, except apex; pronotal lobe. Yellow-brown: palpi; sometimes mandible, except apex; scape; pedicel; basal flagellomeres; tegula; fore leg, except coxa and femur; mid leg, except coxa and femur; hind trochanter and hind tarsus.

Female.—Length 4.0–4.5mm. Females exhibit less variation than males and are most similar to those males with a shiny posterior half of the scutum that is irregularly ridged to striatopunctate. The following description of the female is from the Holotype, but applies to most specimens. Similar to male (as noted above) except as follows: flagellomere I length $2.0 \times$ apical width; clypeus shiny, punctures sparse about 1 to 3 diameters apart medially; median clypeal lobe truncate, with a slight emargination, not toothed, and 2 long setae arising from a subapical semicircular depression; frons along inner eye margin with sparse setae that do not obscure sculpture; gena shiny on anterior half; OOD $1.6 \times$ LOD; color as above except yellow-brown on entire fore leg, entire mid leg, and hind leg, except tibial apex and dorsum of femur.

Material Examined.—5 ♂, 16 ♀. HOLOTYPE FEMALE: Peru: Loreto, Iquitos NE. Río Nanay 6-II-1984 L. Huggert (PMAE). Paratypes: **BOLIVIA**: El Beni: [Rurenabague] 270m 18-IV-1979 M. Cooper B.M. 1979-216 (1 ♀ BMNH). **BRAZIL**: Amazonas: Río Javari, Estirao do Equador X-1973 Alvarenga (2 ♀ IIES). **COLOMBIA**: Ama-



Figs. 37–40. *Incastigmus kunkopteryx* ♀. 37, Head, dorsal. 38, Face. 39, Mesosoma, dorsal. 40, Mesosoma, lateral.

zonas: La Chorrera 14-23-VIII-1976 M. Cooper B.M. 1976-727 (1 ♀ BMNH). Leticia 21-23-VIII-1974 M. Cooper B.M. 1974-503 (1 ♀ BMNH). **Meta:** 3 mi w Villaviciencio 920m 11-III-1955 E.I. Schlinger & E.S. Ross (1 ♀ CASC). **Putumayo:** Villa Garzon, 8mi S. Mocoa 30-VII-1978 M. Cooper B.M. 1978-431 (1 ♀ BMNH). Mocoa 28-VII-1978 M. Cooper B.M. 1978-431 (1 ♀ BMNH); Mocoa 7-VIII-1978 M. Cooper B.M. 1978-431 (1 ♀ BMNH). **ECUADOR:** **Morona-Santiago:** Cord. Cutucu c. 6km E. Macas

c. 1000m 21-X-1978 M. Cooper B.M. 1979-20 (1 ♂ BMNH). **Napo:** Misahualli, Río Napo 19-II-1983 L. Huggert (1 ♀ PMAE). Limoncocha 250m 15-28-VI-1976 S. & J. Peck (1 ♀ CNCI). Laguna Jatuncocha 20km S. Nuevo Rocafuerte on Río Yasuni 8-9-II-1986 Finnamore, Thormin Mt. (1 ♀ PMAE). **Pastaza,** 27km N. Puyo 18-VII-1989 L. Stange & R. Miller (1 ♂ FSCA). 22km SW. Puyo 200m 14-16-VII-1976 S. & J. Peck forest (1 ♀ CNCI). Puyo 960m 1-8-X-1970 J. & M. Sedlacek (1 ♀ BPBM).

PERU: [Chanchamayo] 24-V-1949 J.M. Schunke B.M. 1950–559 (2♂ BMNH). **Cuzco:** Machu Picchu 1900m 4-19-IX-1964 C.C. Porter (1♂ MCZC). **Huanuco:** 26mi E. Tingo María 10-XII-1954 1100m E.I. Schlinger & E.S. Ross (1♀ CASC).

12. *Incastigmus mauracis* Finnermore new species

Derivation of Name.—*Mauracis* is derived from the Greek words, *mauros*, meaning black, and *akis*, meaning thorn, in reference to the dark tooth on the pronotal lobe.

Diagnosis.—Males of *mauracis* are easily recognized by a semicircular depression posterior to the micropore field, the depression is defined posteriorly by a weakly carinate rim. Females have a black, toothed, pronotal lobe, incomplete notauli and median scutal grooves, obtuse lateral clypeal teeth, and median clypeal teeth often separated by U-shaped emargination. This species is similar to *chinchu* from which it is separated by the semicircular depression behind the micropore field in males, and the obtuse lateral clypeal teeth in the female. Female *chinchu* have acute lateral clypeal teeth and the median clypeal teeth are combined into a single narrow lobe.

Male.—Length 4.0–5.0 mm. **HEAD.** Flagellomeres without specialized setae; flagellomeres II to VII depressed basally, with a broad shiny tylus on apical half. Flagellomere I length $1.5 \times$ apical width; flagellomere X length $2 \times$ apical width; flagellomere XI slightly curved, cylindrical, apex conical. Clypeus obscured by dense appressed setae which extend up frons along inner margin of eyes to about half height of scape. Frons microsculptured, punctures not evident; vertex shiny, weakly microsculptured, punctures generally sparse and about 3 diameters or more apart. Micropore field present as an oval patch between compound eye and lateral ocellus, behind it a semicircular or elliptical depression with a weakly cari-

nate posterior rim. Gena shiny, weakly microsculptured, sparsely punctate, without ventral tooth or swelling. Lateral ocelli closer to each other than to eyes; OOD $1.8 \times$ LOD. **MESOSOMA.** Transverse pronotal carina with acute lateral tooth, and acute ventral tooth; transverse pronotal groove longitudinally striate; pronotal lobe with anterior carina terminating in an acute tooth; lateral area of pronotum longitudinally striate. Scutum microsculptured, with sparse punctures three more diameters apart; notauli present anteriorly, attenuated posteriorly near scutal midlength; median scutal groove present posteriorly, attenuated near scutal midlength and not reaching admedian lines; posterior margin of scutum with several short longitudinal striae parallel to median scutal groove. Scutellum microsculptured, punctures obscure. Preomalar area with sculpture visible beneath sparse setae. Mesopleuron shiny, without microsculpture above hypersternaulus, punctures not evident or sparse; hypersternaulus, scrobal sulcus, and omaulus coarsely foveolate. Metapleuron with microsculpture and several weak longitudinal striae. Propodeum shiny, coarsely areolate, except area adjacent to metapleuron which is longitudinally striate; propodeal enclosure not differentiated from lateral spheres. **METASOMA.** Terga shiny, those beyond first tergum with oily sheen, punctures minute, sparse, often not evident. Sterna shiny, microsculpture weak, punctures sparse on anterior sterna but increasing in density on more posterior sterna. **COLOR.** Black. Yellow-white to yellow-brown: palpi; mandibles, except apex; scape; pedicel; flagellomeres I to IV; tegula; fore leg, except coxa; mid leg, except coxa; and hind tarsus.

Female.—Length 5.0–6.0 mm. Similar to male except as follows: flagellomere I length $2 \times$ apical width; clypeus shiny, without microsculpture, punctures sparse, 4 diameters apart medially; median clypeal lobe consisting of 2 weakly separated

teeth, bounded laterally by a smaller, less well developed, obtuse lateral clypeal tooth; teeth of median clypeal lobe each with a subapical circular pit from which arises several long setae; sculpture on frons along inner margin of eye not obscured by dense appressed setae. OOD $2.5 \times$ LOD. Color as in male, but more orange-red, pronotal lobe yellow-brown, and apex of hind coxa, hind trochanter, and hind tibia orange-red.

Material Examined.—8 ♂, 32 ♀. HOLOTYPE MALE: Bolivia: La Paz, Chulumani 1700m 31-III-1979 M. Cooper B.M. 1979-216 (BMNH). Paratypes: **BOLIVIA**: El Beni: [Rurrenabaque], Río Beni X-1921-22 W. M. Mann. Mulford Biol. Expl (1♂ USNM). **La Paz**: Chulumani 1700m: 19-25-XII-1955 L.E. Pena (1♂ SEMC); 27-III-1979 M. Cooper B.M. 1979-216 (1♂ 1♀ BMNH); 2-IV-1979 M. Cooper B.M. 1979-216 (4♀ BMNH); 3-IV-1979 M. Cooper B.M. 1979-216 (1♂ 13♀ BMNH). **BRAZIL**: **Permambuco**: Caruaru, V-1972 J. Lima (1♂ PMAE). **ECUADOR**: **Napo-Pastaza**, Mera 6-8mi W. 1500m 10-II-1955 E.I. Schlinger & E.S. Ross (1♀ CASC). **Pastaza**: Mera 26-I-1923 F.X. Williams (1♂ BPBM). **PERU**: [Chanchamayo] 26-III-1949 J.M. Schunke B.M. 1950-559 (2♀ BMNH). **Cuzco**: Machu Picchu: 29-XI-1965 H. & M. Townes (1♀ AEIC); 2-XII-1965 H. & M. Townes (1♂ 1♀ AEIC); 24-27-II-1968 A. Garcia & C. Porter (1♀ MCZC). Machu Picchu museum 1,385m 11-14-VIII-1971 C.&M. Vardy B.M. 1971-533 (8♀ BMNH).

13. *Incastignus mystaxalbus* Finnamore new species

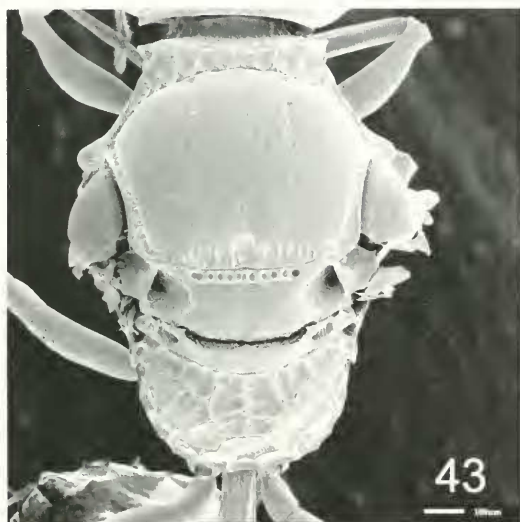
Figs. 41-48

Derivation of Name.—The name is derived from the Greek *mystax*, meaning upper lip, and the Latin *albus*, meaning white, in reference to the white apical margin of the clypeus in the females of this species.

Diagnosis.—All females and some males of this species can be immediately recognized by the white apical margin of the

clypeus. Males can be distinguished by the combination of the median scutal groove reduced to an elongate posterior pit, the pronotal lobes white and rounded, and the mesosoma otherwise black.

Male.—Length 3.0-5.0 mm. HEAD. Flagellum without tyli or brush of specialized setae; flagellomere I length $1.8 \times$ maximum width; flagellomere X length $1.3 \times$ maximum width; flagellomere XI straight, cylindrical, apex conical. Sculpture of clypeus obscured by dense appressed setae which do not extend up frons along inner eye margin beyond height of antennal socket. Head microsculptured, but not uniformly; scapal basin and vertex distinguished from each other by density of microsculpture. Vertex more or less uniformly punctate with punctures 3 or more diameters apart. Micropore field present as an oval patch between lateral ocellus and compound eye, without depression behind it; gena microsculptured dorsally, shiny ventrally, nonstriate, without ventral swelling or tooth; genal punctures obscure dorsally, 3 or more diameters apart ventrally. Lateral ocelli closer to each other than to compound eye. OOD $1.3 \times$ LOD. MESOSOMA. Transverse pronotal carina not toothed, angular at humeral angle and ventrally; transverse pronotal groove longitudinally striate; pronotal lobe unmodified, rounded. Pronotum laterally with longitudinal striae. Scutum microsculptured; notauli attenuated near scutal midlength; median scutal groove reduced to an elongate pit on posterior margin; scutal punctures sparse, present on posterior two-thirds, 3 or more puncture diameters apart. Scutellum microsculptured with several punctures in median lateral area. Mesopleuron microsculptured, impunctate; preomaular area without setae; hypersternaulus, scrobal sulcus, and omaulus foveolate. Metapleuron somewhat shiny, microsculpture weak, obscurely microstriate. Propodeum shiny, without microsculpture, entirely areolate, except small striate region near metapleu-

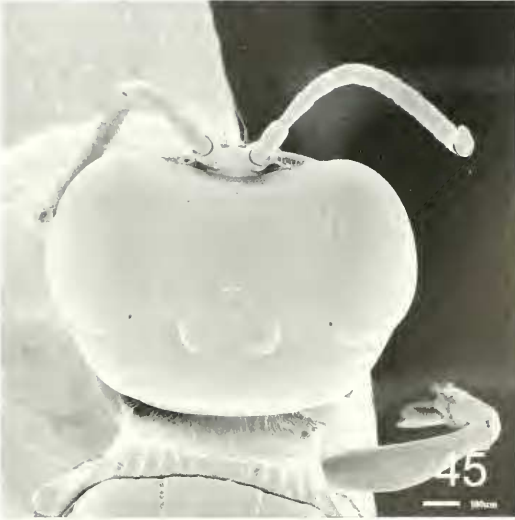


Figs. 41–44. *Incastigmus mystaxalbus* ♂. 41, Mid flagellomeres of antenna. 42, Head, dorsal. 43, Mesosoma, dorsal. 44, Mesosoma, lateral.

ron; propodeal enclosure not differentiated from lateral spheres. METASOMA. First tergum shiny, microsculpture obscure; succeeding terga with an oily sheen, without obvious microsculpture. Sterna somewhat more shiny with sparse punctures becoming increasingly dense on posterior sterna; punctures on sternum V about 2 diameters apart. COLOR. Black. White: palpi; mandible, except apex; sometimes clypeal apex; pronotal lobe. Yellow: scape; pedicel; ventral surface of flagellomeres I

to IV; forelegs beyond coxa; mid and hind trochanters; mid tibia and tarsus; hind tarsus.

Female.—Length 3.2–4.5 mm. Similar to male except as follows: flagellomere I length $2.3 \times$ apical width; clypeus shiny, without microsculpture; median clypeal lobe with 2 teeth, and 2 long setae arising from 2 narrowly separated subapical pits; clypeus punctate on basal half, punctures about 2 diameters apart. OOD $2.3 \times$ LOD. Scutum with microsculpture variable be-



Figs. 45–48. *Incastignus mystaxalbus* ♀. 45, Head, dorsal. 46, Face. 47, Mesosoma, dorsal. 48, Mesosoma, lateral.

tween absent and complete, with some specimens approaching a striatopunctate condition. Color similar to male, except apical half of clypeus white.

Material Examined.—23♂, 50♀. HOLOTYPE FEMALE: Mexico: Mor. Cuernavaca IV-1959 N. Krauss (USNM). Paratypes: **COSTA RICA:** [San Jose La Caja] b. H. Schmidt (4♀ NHMW). **Guanacaste:** S. Rosa Park: 1-XII-1976 D.H. Janzen riparian (1♀ AEIC); 13-XII-1976 D.H. Janzen dry hill (1♀ AEIC). 15-VIII-1977 D.H. Janzen

dry hill (1♀ AEIC). Sta. Rosa NP Sn. Emilio: 8-C, 8-II-2-III-1986 Janzen & Gauld (1♀ BMNH); 6-C, 2-23-III-1986 Janzen & Gauld (1♀ BMNH); 8-C, 4-24-V-1986 Janzen & Gauld (2♀ BMNH). Sta. Rosa NP Hacienda 1-0, 4-24-III-1986 Janzen & Gauld (1♀ BMNH). **San Jose:** San Jose: (2♀ MACN); Friesi-Schwerin Ankau♀ 1957 (2♀ SMTD); 27-VI-1925 Schmidt (4♀ CMNH). San Pedro de Montes de Oca 3-II-1935 C.H. Ballou (1♀ USNM). Santa Ana 24-II-64 3000', H. Evans (4♂ 1♀

MCZC). Tres Ríos, San Jose 1980 E. Tristan (1♂ NHMW). **EL SALVADOR: La Libertad:** Santa Tecla X-1965 N.L.H. Krauss (1♀ USNM). **HONDURAS:** [Suyapa Morazan] 3-XI-1965 N.L.H. Krauss (1♀ USNM). **Francisco Morazan:** Tegucigalpa:6-II-1918 F.J. Dyer no. 32981 (1♂ USNM); 16-II-1918 F.J. Dyer no. 35273 (1♂ USNM); 17-II-1918 F.J. Dyer no. 35396 (3♂ USNM); 19-II-1918 F.J. Dyer no. 36008 (1♂ 1♀ USNM). **GUA-TEMALA:** [no locality]1891. Schulth.-Rechbg (1♂ NHMW). [Panajachez] 27-IV-1978 R. Parks (1♂ SDMC). **Sacatepequez:** Antigua: IX-1959 N.L.H. Krauss (1♀ USNM); 1500–1600m VII-1980 M.L.H. Kreuss (2♀ PMAE). **MEXICO:** [Heredia] 13-II-1970 Peck (1♂ PMAE). Chris. 3000' 20mi N. [Huixtla] 6-VI-1969 W.R.M. Mason (4♀ CNCI). [Orizaba] XII-1887 H.H.S. & F.D.G. (1♂ BMNH). **Mexico:** Tejuipilco: Temescaltepec 19-VI-1933 H.E. Hinton, R.L. Usinger (1♀ CASC). **Michoacan de Ocampo:** Uruapan X-1954 N.L.H. Krauss (1♀ USNM). Uruapan 1600–1700m VIII-1975 N.L.H. Krauss (1♀ USNM). **Morelos:** Cuernavaca: 25-IX-1944 N.L.H. Krauss (1♀ USNM); III-1945 N.L.H. Krauss (2♂ 1♀ USNM); IV-1945 N.L.H. Krauss (2♂ 2♀ USNM); V-1945 N.L.H. Krauss (1♀ USNM); III,IV,V-1965 N.L.H. Krauss (1♂ USNM); X-1965 N.L.H. Krauss (1♀ USNM). Tlayacapan 29-X-1982 J.T. Huber (2♀ PMAE). **Nayarit:** María Magdalena: Is. Tres Marias 22-III-1964 R.R. Snelling (1♀ LACM). Tepic 15-17-IX-1953 B. Malkin (1♀ CASC). **San Luis Potosi:** orchid plants Maiz 18-X-1948 Laredo Tx 47405 48–16967 (3♂ 2♀ USNM). Huichihuayan 25-IX-1938 L.J. Lipovsky (1♀ SEMC). **Tamaulipas:** NE. Gomez Farias, Río Frio 5-VI-1983 M. Kaulbars (1♀ PMAE).

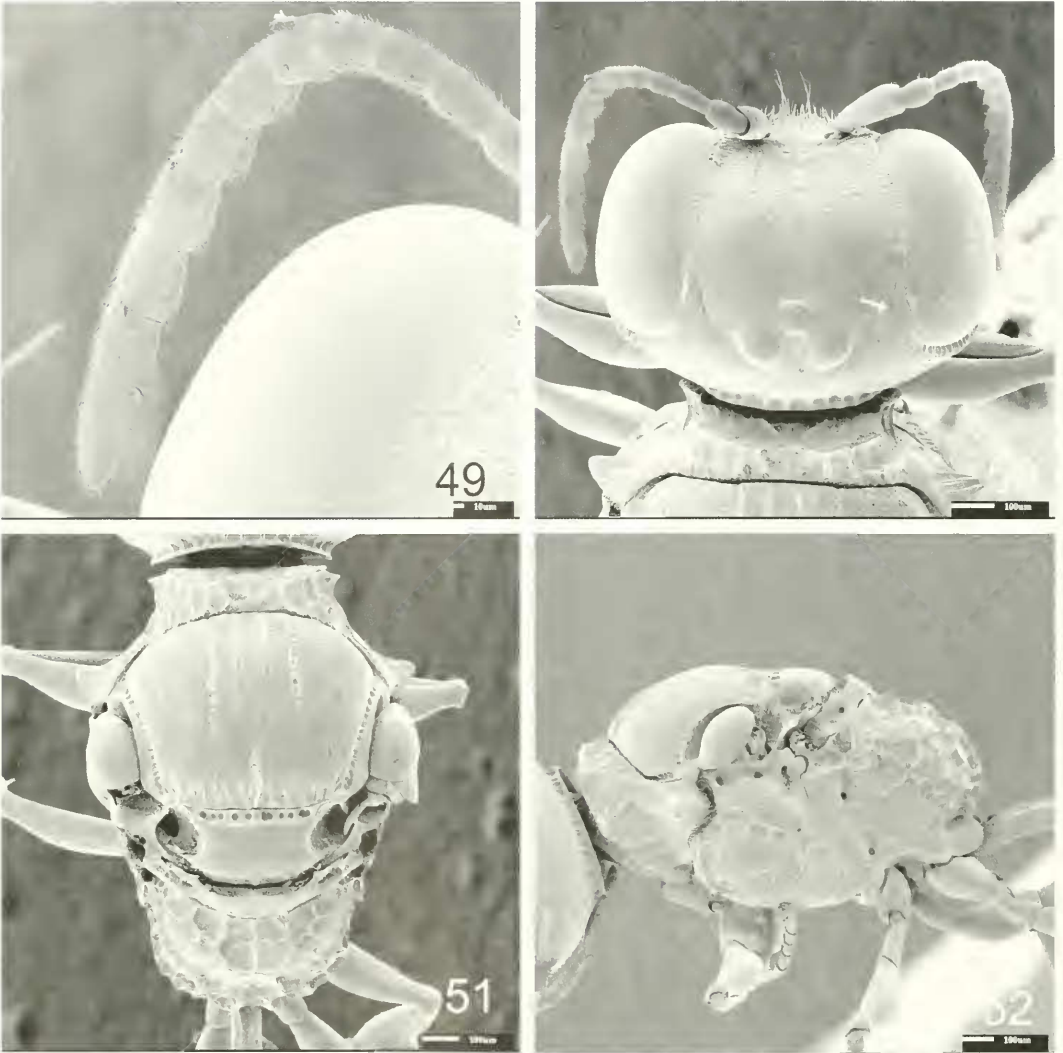
14. *Incastigmus mytior* Finnamore
new species
Figs. 49–56

Derivation of Name.—The name *mytior* is derived from the Greek *myte*, meaning spiked, combined with *ior*, a Latin adject-

tival suffix, in reference to the toothed pronotal lobe.

Diagnosis.—Males of this species are easily recognized by a combination of a linear micropore field between the compound eye and lateral ocellus, and the sharply toothed, white pronotal lobe. Females can be recognized on the basis of the 2 narrowly separated subapical pits on the median clypeal lobe, pronotal lobe acute, toothed, and white, and the median scutal groove that attenuates near the scutal midlength and does not reach the admedian lines.

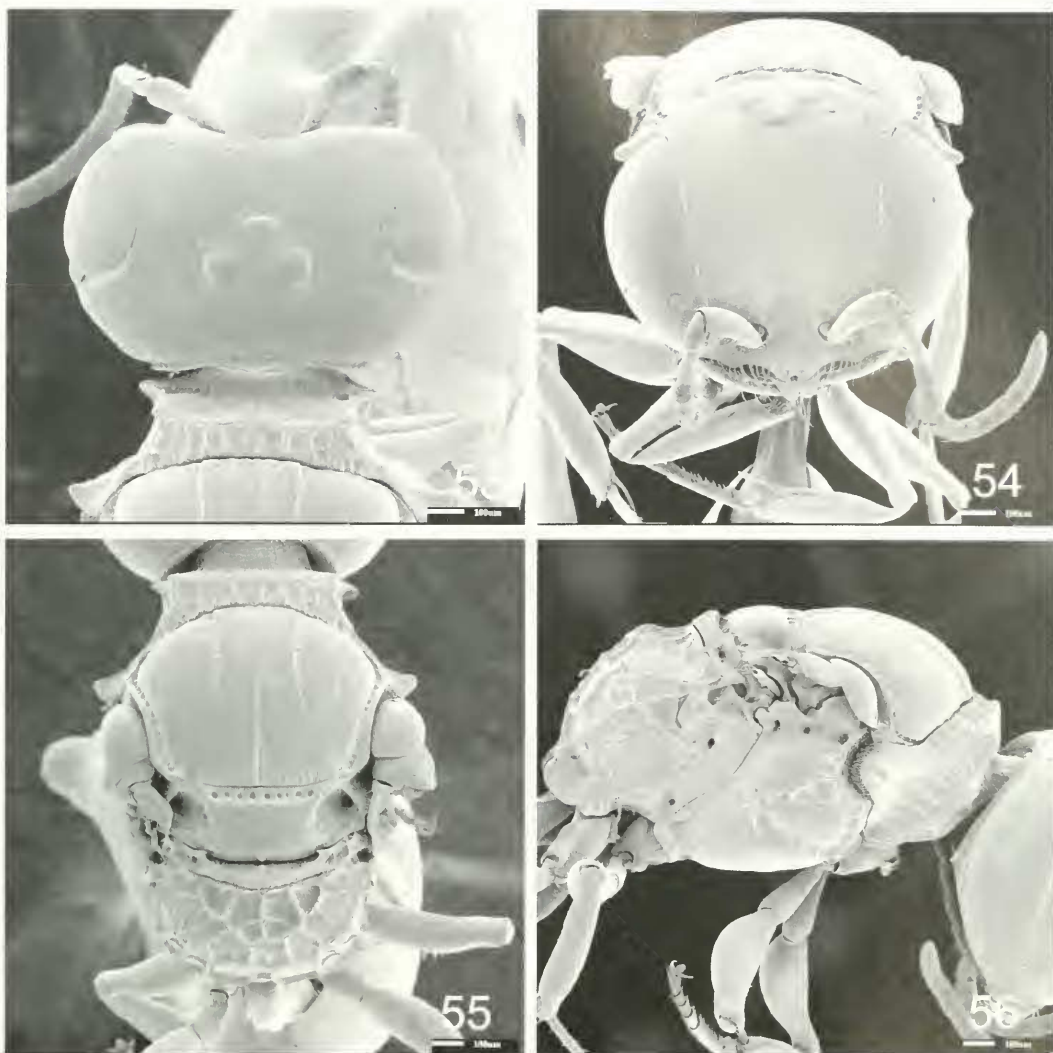
Male.—Length 3.75–4.5 mm. **HEAD.** Flagellomeres without ventral brush of specialized setae, but setose throughout, and with a few specialized setae at the apex of each flagellomere; linear tyli present on all flagellomeres, imparting an asymmetrical appearance and an obliquely truncate apex to flagellomere XI; flagellomere I length $1.2 \times$ maximum width as measured with tylus in profile; flagellomere X length $1.3 \times$ maximum width as measured with tylus in profile. Clypeus obscured by dense appressed setae which extend up frons along inner margins of eyes to half height of scape; frons microsculptured, vertex shiny, weakly microsculptured, with punctures sparse, irregular and 2 or more diameters apart; gena microsculptured, irregular microstriae present ventrally, without ventral tooth or swelling; genal punctures sparse, obscure; linear micropore field present between ocellus and compound eye, without depression behind it; lateral ocelli closer to each other than to eyes; OOD $2.0 \times$ LOD. **MESOSOMA.** Transverse pronotal carina forming a right angle at humeral angle, toothed ventrally; transverse pronotal groove longitudinally striate; pronotal lobe acute, toothed, with anterior carina; lateral pronotal area longitudinally striate. Scutum microsculptured, more shiny on posterior half; punctures sparse, irregular, few to many diameters apart in median region; notauli attenuating near scutal



Figs. 49–52. *Incastigmus myrior* ♂. 49, Mid and apical flagellomeres of antenna. 50, Head, dorsal; arrow indicates micropore field. 51, Mesosoma, dorsal. 52, Mesosoma, lateral.

midlength; median scutal groove attenuating abruptly near scutal midlength; posterior margin of scutum with short ridges. Scutellum microsculptured, without median sulcus, and with scattered lateral punctures. Sculpture of preomaular area not obscured by setae. Mesopleuron shiny, weakly microsculptured, punctures few to many diameters apart; hypersternaulus, omaulus, and scrobal sulcus coarsely foveolate; metapleuron microsculptured, with longitudinal ridges along posterior

margin; propodeum areolate, except for shiny area adjacent to metapleuron; propodeal enclosure indicated by carina. METASOMA. First tergum shiny, succeeding terga with oily sheen; punctures minute, sparse, and obscure. Sterna with oily sheen, punctures increasing in density towards more posterior sterna and reaching maximum density on sternum VI where minute punctures are about 1 diameter apart in the median region. COLOR. Black. White: palpi; mandible, except apex; pron-



Figs. 53–56. *Lucastigmus myrtior* ♀. 53, Head, dorsal. 54, Face. 55, Mesosoma, dorsal. 56, Mesosoma, lateral.

otal lobe. Yellow-brown: scape; pedicel; ventrally on flagellomeres I–III; tegula; fore leg, except coxa and femur; mid leg, except coxa and femur; hind tarsus.

Female.—Length 4.0–4.5 mm. Similar to male except as follows: antenna without tyli or specialized setae, flagellomere I length $2 \times$ maximum width; clypeus shiny, punctures in median area 2 to 3 diameters apart; median clypeal lobe with 2 apical teeth separated by a narrow, V-shaped emargination, and with 2 narrowly separated subapical pits from which

arise long setae; vertex and upper frons shiny, without microsculpture, punctures more regular and about 3 to 5 diameters apart; gena without microsculpture, shiny; genal punctures sparse, irregular, 3 or more diameters apart; elongate triangular micropore field present between compound eye and lateral ocellus; OOD $2.2 \times$ LOD; median scutal groove occasionally reaching admedian lines; and hind tibia, hind trochanter, and hind tarsus yellow-brown.

Material Examined.—24 ♂, 26 ♀. HOLO-

TYPE MALE: Peru: Cuzco Dept.: Agua Caliente 21-28-XII-1983 L. Huggert (PMAE). Type locality is at base of Machu Picchu. Paratypes: **BOLIVIA**: [no locality] 1♂ (NHMW). **La Paz**: Chulumani: 1,700m 26-III-1979 M. Cooper B.M. 1979-216 (1♂ BMNH); 1,700m 2-IV-1979 M. Cooper B.M. 1979-216 (1♀ BMNH). **BRAZIL**: **Mato Grosso**: Itaum Dourados III-1974 M. Alvarenga (1♂ CNCI). **Minas Gerais**: Ouro Preto IV-1954 N.L.H. Krauss (1♂ USNM). Serra do Caraca S. Barbara 1600m II-1969 F.M. Oliveira (1♀ AEIC). **Pernambuco**: Caruaru: 900m IV-1972 M. Alvarenga (1♂ 1♀ CNCI); V-1972 M. Alvarenga (1♂ PMAE); VII-1972 M. Alvarenga (2♀ CNCI). **Rio de Janeiro**: Mangaratiba Muriqui VII-1969 M. Alvarenga (1♀ AEIC). **COLOMBIA**: **Cundinamarca**: Finca Bella Vista nr. Sasaima 7-VI-1965 P.R. & D.L. Craig (1♂ CASC). **Huila**: San Agustin 1,500m 8-XI-1971 M. Cooper B.M. 1972-275 (1♂ BMNH). **Valle del Cauca**: 6 mi W. Cali 1630m 20-III-1955 E.I. Schlinger & E.S. Ross (1♂ 1♀ CASC). Pance: (CVC) 12-XII-1974-3 R. Wilkerson Mt. (1♂ FSCA); 1,700m 15 km W. Cali 28-X-1974 very wet premontane forest R. Wilkerson Mt. (1♀ FSCA). Penas Blancas 1750m 10km W. Cali: 23-XII-1974 R.C. Wilkerson very wet premontane forest Mt. (2♀ FSCA); 15-I-1975 R.C. Wilkerson very wet premontane forest Mt. (1♀ FSCA); 20-22-I-1975 R.C. Wilkerson very wet premontane forest Mt. (3♀ FSCA); 27-I-1975 R.C. Wilkerson very wet premontane forest Mt. (2♀ FSCA); 31-I-1975 R.C. Wilkerson very wet premontane forest Mt. (2♀ FSCA); Penas Blancas: 12-II-1975 R. Wilkerson Mt. (1♀ FSCA); 26-28-II-1975 R. Wilkerson Mt. (1♀ FSCA); 5-7-III-1975 R. Wilkerson Mt. (2♀ FSCA); 21-27-IV-1975 R. Wilkerson Mt. (1♀ FSCA). **ECUADOR**: **Guayas**: Los Duenes, S. Bolivar 10-VI-1965 Pena (1♂ MCZC). **Napo**: El Chaco 2000m II-1983 L. Masner, M. Sharkey (1♀ PMAE). Puerto Misahualli 30km E. 350m II-1983 M. Sharkey & L. Masner (1♂ PMAE). **Pastaza**: Puyo 44km S. 21-V-1977 D.L. & S.S. Vin-

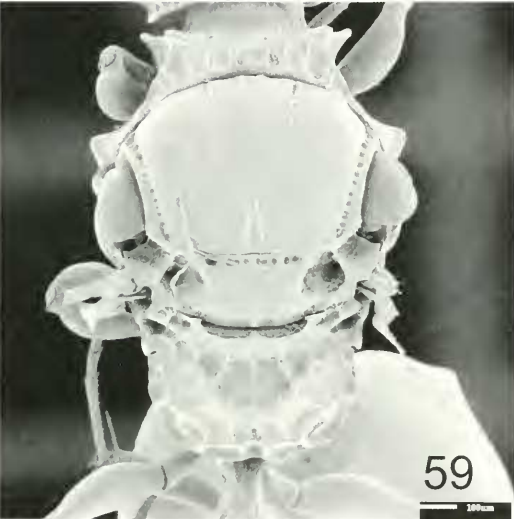
cent (1♂ USNM). **Pichincha**: Peruchio 2000m 8-I-1974 L.E. Pena (1♂ AEIC). **Zamora-Chinchipe**: [Rio Jumboe] 1-IV-1965 Pena (1♂ MCZC). **PERU**: **Cuzco**: Río Urubamba 3km above Machu Picchu 2050m 18-IV-1983 C. & M. Vardy B.M. 1983-217 (1♂ 1♀ BMNH). Machu Picchu 29-XI-1965 H. & M. Townes (1♂ AEIC). Agua Caliente 21-28-XII-1983 L. Huggert (1♂ PMAE). **Huanuco**: Huanuco 1,850m 19-20-III-1971 C. & M. Vardy B.M. 1971-533 (2♂ BMNH). **VENEZUELA**: **Lara**: Parque Nac. Yacambu: 6-8-IV-1981 E.E. Grissell (2♂ USNM); 1200m cloud forest 9-V-1981 H. Townes (1♀ PMAE). Yacambu 1200m 10-V-1981 H.K. Townes (1♂ AEIC).

15. *Incastigmus neotropicus* (Kohl)
new combination

Figs. 57-64

Stigmus neotropicus Kohl 1890:64. Holotype, male (NHMW). Brazil, Neu-Granada, 1860; examined.

Diagnosis.—Males are distinguished on the basis of the linear micropore field between the compound eye and lateral ocellus, flagellomeres without ventral setal brush, flagellomere XI cylindrical, usually without tylus, and pronotal lobe rounded. Most females can be recognized by the dense appressed setae obscuring the clypeus and often the frons along the lower inner eye margin. In females of all other species, except *thoracicus* (which has a red thorax and no apparent median scutal groove), the surface of the clypeus is clearly visible between sparse setae. Females of *neotropicus* in which the clypeal setae are sparse, or have been worn off, are difficult to recognize, but the following characters may be of some assistance: clypeal lobe with 2 narrowly separated subapical pits; micropore field between compound eye and lateral ocellus small, narrowly elongate, triangular; lower gena without tooth or swelling; pronotal lobe rounded, white; scutum black, usually shiny posteriorly with weak microsculpture, and more or less irregularly ridged (sometimes with

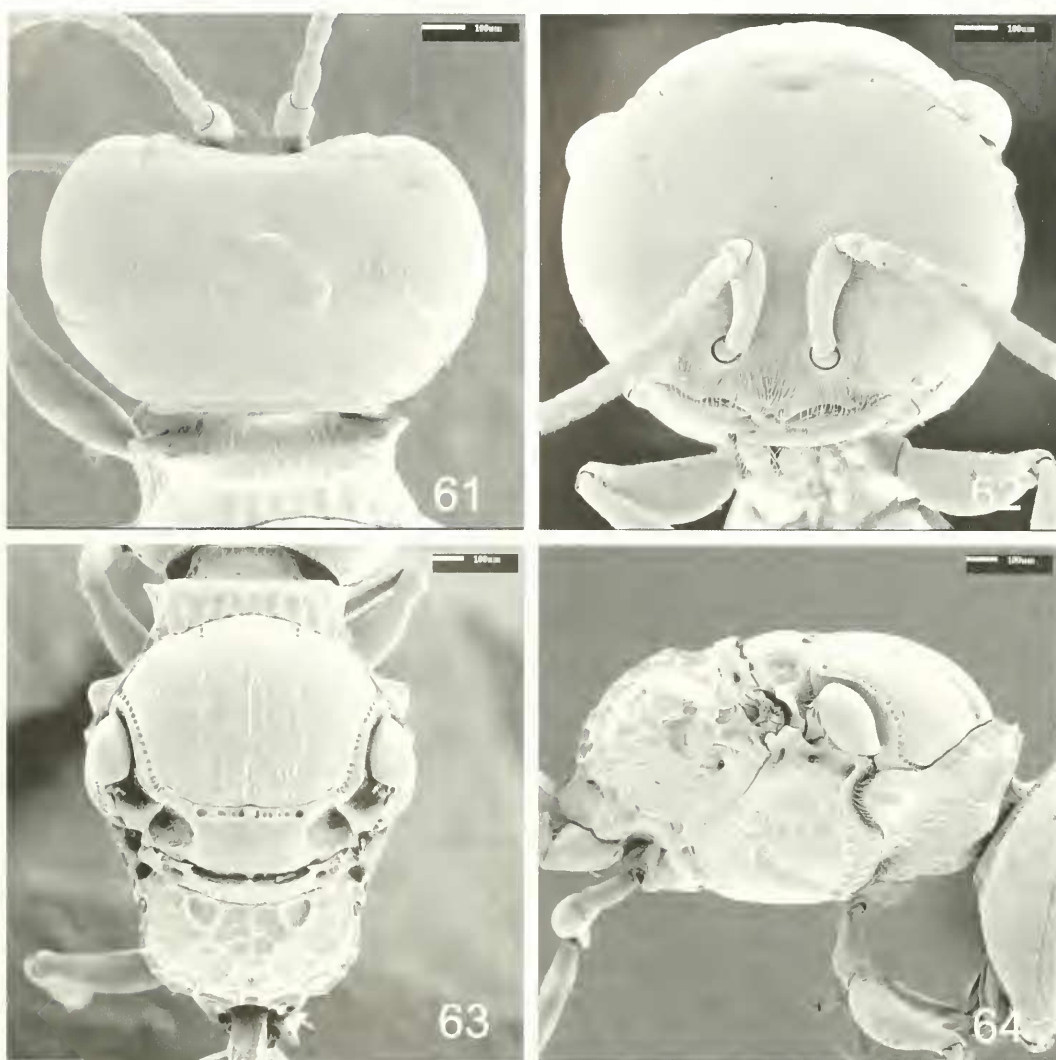


Figs. 57–60. *Incastignus neotropicus* ♂. 57, Apical flagellomeres of antenna with tyli in profile. 58, Head, dorsal. 59, Mesosoma, dorsal. 60, Mesosoma, lateral.

strong irregular ridges); notauli incomplete, median scutal groove usually attenuating before or at admedian lines; metasomal tergum I shiny, without microsculpture.

This species is the most frequently collected *Incastignus* and has the broadest distribution in the genus (Texas to Argentina). Several characters vary considerably in females and to a lesser extent in males, particularly the microsculpture of the head and scutum, clypeal setae, and the

degree of development of the irregular ridges on the scutum. Specimens from southern South America tend to have sparser clypeal setae in the female, completely microsculptured head, and more strongly developed irregular scutal ridges. Probably *neotropicus*, as defined here, represents 2 or more species, but even with the number of specimens on hand I am unable to find distinguishing characters, and therefore treat them all as a single species.



Figs. 61–64. *Incastigmus neotropicus* ♀. 61, Head dorsal. 62, Face. 63, Mesosoma, dorsal. 64, Mesosoma, lateral.

Male.—Length 3.5–4.75 mm. **HEAD**. Flagellomeres entirely setose, but without ventral brush of setae; linear tyli present on flagellomeres I–X, sometimes weekly present on flagellomere XI; flagellomere I length 1.2 to 1.3 \times maximum width as measured with tylus in profile; flagellomere X length 1.5 \times maximum width as measured with tylus in profile; flagellomere XI straight, cylindrical, apex conical. Clypeus obscured by dense appressed setae which extend up frons along inner margins of eye to 3/4 height of scape;

head variably microsculptured, microsculpture ranging from strong throughout to weakly microsculptured and shiny on ocellar region; head punctures sparse, irregular, 3 or more diameters apart on ocellar region; gena with microsculpture, sometimes weakened ventrally, without ventral tooth or swelling; genal punctures sparse, 3 or more diameters apart on lower region; linear micropore field present between compound eye and lateral ocellus; without depression behind it; OOD 1.3–1.5 \times LOD. **MESOSOMA**.—Transverse

pronotal carina toothed at humeral angle, and toothed ventrally; transverse pronotal groove longitudinally striate; pronotal lobe rounded, with poorly defined anterior carina; lateral pronotal region longitudinally striate. Scutum entirely microsculptured to shiny with weak microsculpture on posterior half; scutal punctures sparse, irregular, usually 5 or more diameters apart on median region; notauli attenuating near scutal midlength; median scutal groove attenuating near scutal midlength, sometimes reaching admedian lines; posterior margin of scutum with several elongate ridges, but otherwise usually without ridges; scutellum microsculptured usually with median longitudinal sulcus and several punctures on lateral areas. Preomalar area anteriorly obscured by appressed setae. Mesopleuron usually densely microsculptured, but weekly microsculptured in some specimens; hypersternaulus, scrobal sulcus, and omalus foveolate, usually more finely so than in other species; metapleuron microsculptured with several longitudinal ridges on posterior margin. Propodeum shiny, with at most weak microsculpture, areolate, except for shiny area adjacent to metapleuron; carinae defining propodeal areolae relatively low compared to those of other species; propodeal enclosure defined by carina and distinct from lateral spheres. **METASOMA.** First tergum shiny, without microsculpture; succeeding terga with oily sheen; tergal punctures minute, obscure, many diameters apart; sterna with oily sheen, punctures sparse, irregular and reaching maximum density on sternum V were punctures in lateral area are about 3 diameters apart. **COLOR.** Black. White: mandible, except apex; pronotal lobe. Yellow-brown: palpi; antenna entirely, or basal two-thirds; tegula; fore leg, except coxa; mid leg, except coxa; hind tarsus; sterna VI-VIII.

Female.—Length 4.0–4.5 mm. Similar to male except as follows: flagellomere I length $1.7 \times$ maximum width, entirely se-

tose, but without ventral setal brush, tyli absent; sculpture of clypeus usually obscured by dense appressed setae which extend up frons along inner eye margin to about $1/3$ height of scape; median clypeal lobe with 2 blunt teeth separated by a narrow emargination, and with 2 narrowly separated subapical pits from which long setae arise; in specimens where clypeal surface is visible, some microsculpture is evident; clypeal punctures sparse, irregular, 1 or more diameters apart in midregion; micropore field present as a narrow elongate triangle between compound eye and lateral ocellus; OOD 1.8 to $2.4 \times$ LOD; posterior area of scutum of many specimens with varying degrees of irregular ridges; color slightly darker than in male, with basal half of antenna yellow-brown, and all femora darkened.

Material Examined.—223 ♂, 427 ♀. **ARGENTINA:** [Mis. San Ignacio-Montecarlo] (1♀ BMNH). [San Isidro] (5♂ PMAE). **Buenos Aires:** Berisso (5♂ 1♀ AEIC). Lomas de Zamora, Colombes, 17km S. Buenos Aires (1♀ BMNH). **Cordoba:** Cordoba (2♀ IIES). **Distrito Federal:** Buenos Aires (2♀ IIES, 17♀ MACN, 1♀ ZMAN). Buenos Aires, La Plata (2♂ 9♀ AEIC, 5♂ 51♀ MCZC). Buenos Aires, Moreno (5♂ 16♀ IIES). Buenos Aires, Punta Lara (2♂ 2♀ AEIC, 1♀ MCZC). **Entre Ríos:** Sta. Colon (1♂ IIES). Concordia (1♀ BMNH). [Pronunciamento] (3♀ FSAG). **Jujuy:** Ledesma (2♀ IIES). Posta Lozano (2♀ MCZC). **Misiones,** Puerto Esperanza (1♂ 2♀ IIES). **Santiago del Estero:** Lago Muyo (2♂ IMLA). R. Salado 10km ENE. Colonia Dora (3♀ BMNH). Thermas de Río Hondo (1♀ BMNH). **Salta:** El Tala 7km W. El Jardín 700m (1♀ RMNH). [Eusaccacion] (1♂ HNHM). Guemes—Yuto (1♀ AEIC). Orán, Abra Grande (3♀ MCZC). Pocitos (6♂ 3♀ IIES). Río Juramento (1♀ IMLA). Río Pescado, ca. Orán (3± IMLA). Rosario Lerma (7♂ 14♀ IIES). Tartagal (3♀ IIES, 1♂ 2♀ IMLA). Yacochuya (Cafayete) (2♀ IMLA, 2♀ MCZC). **Tucuman:** Amaicha del Valle (1♀ AEIC). Horco Molle, Tucum-

mán (1♀ CNCI, 2♂ 2♀ IMLA, 7♂ 5♀ MCZC, 3♂ 1♀ HNHN). Horco Molle, Tucumán; S. Pedro Colalao (1♀ IIES, 1♀ IMLA, 1♀ MCZC). Quebrada Lules, Tucumán (2♂ MCZC). Tucumán, Trancas Tacanas (1♂ IMLA). **BELIZE: Toledo:** Blue Creek (1♀ PMAE). **BOLIVIA:** [no locality] (3♂ NHMW). **Cochabamba:** Cochabamba (2♀ FSAG). Cochabamba—Santa Cruz km 335 (9♂ 6♀ IIES). **El Beni:** [Rurrenabaque] 175m (1♂ SEMC). Yungas Palmar, Chapare-Paracti (1♀ IIES). **La Paz:** Chulumani, 1,700m (1♂ 5♀ BMNH). La Paz (2♀ MCZC). Tumupasa (1♀ USNM). **Santa Cruz:** Buena Vista (1♀ IMLA). El Palmar (1♀ IMLA). Roboré (2♀ IIES, 1♀ SEMC). **BRAZIL:** [no locality] (1♀ NHMW). [Campinas] (3♀ BPBM). [Chapada] (1♂ CMNH, 2♀ USNM). [MG] Lavras (2♀ CSUC). [Neu-Granada] (1♂ NHMW). [Pará] (1♀ NHMW, 1♀ MPEG). **Amazonas:** R. Japura (1♀ MPEG). **Bahia:** [Enervzilhada] 960m (1♀ PMAE). Itabuna CEPEC (3♀ BMNH). **Ceara:** Ser. Do Araripe 850m (1♂ 1♀ AEIC). Serrada Araripe, Crato (2♂ 1♀ PMAE). Serra de Baturite (3♀ MPEG). **Distrito Federal:** Brasília N.P. (2♀ PMAE). **Espirito Santo:** Colatina (1♂ 1♀ AEIC, 1♂ PMAE). **Goiás:** Jataí (3♀ CNCI). **Mato Grosso:** Itaum Dourados (2♀ CNCI). **Minas Gerais:** Aguas Vermelhas 15°45'S 41°28'W 800m (3♀ AEIC). [Azul] (2♀ PMAE). Ouro Preto (2♂ USNM). Pedra Azul (1♀ AEIC, 1♀ CNCI). Pocos de Caldas (1♀ PMAE). S. Caraça, S. Barbara (1♀ AEIC, 2♂ 1♀ PMAE). **Paraná:** Curitiba (1♀ MCZC). **Pernambuco:** Bonito (1♀ USNM). Caruaru (2♀ PMAE). Recife (1♂ BMNH). **Rio de Janeiro:** Guan., Floresta de Tijuca [Rio de Janeiro city?] I. (1♀ AEIC). Repressa Rio Grande: Guanabara (1♀ AEIC, 2♀ CNCI, 2♂ PMAE). Rio de Janeiro (2♂ CMNH, 2♂ 1♀ USNM). Rio de Janeiro, Campos (1♀ BPBM). Rio de Janeiro, Gavea (1♂ BMNH). Rio de Janeiro, Guanabara (1♀ CNCI). Rio de Janeiro, Murundu (1♀ IIES). **Rio Grande do Sul:** [no locality] (1♂ 1♀ NHMW). **Santa Catarina:** Nova Teutonia, 27°11'B 52°23'L

(2♂ BMNH, 3♀ MCZC). Santa Catarina (1♀ BMNH, 4♀ OSUO, 2♂ 19♀ MCZC). **São Paulo:** Cosmopolis (1♂ SEMC). Mogi Guacu (1♀ CNCI). Peruibe (1♂ 1♀ USNM). S. Bocaina (1♂ PMAE). S.J. Barreiro, Serra de Bocaina (1♀ AEIC). São Paulo (4♂ 1♀ USNM, 14♂ 14♀ ZMUM). Villa Americana (2♀ BPBM). **COLOMBIA:** **Magdalena:** (1♀ PMAE). N. Sierra Nevada de S. Marta, Río Buritaca (1♀ BMNH). 12km E. Santa Marta (1♀ BMNH). 26km e Santa Marta (1♀ FSCA). **Meta:** Carimagua 17km S. El Porvenir (1♀ FSCA). Río Duda (1♂ BMNH). Villavicencio (1♀ BMNH). **Valle del Cauca:** Cali 3000–4000' (1♂ MCZC). Pance CVC 15km W. Cali (1♀ FSCA). **COSTA RICA:** **Cartago:** Turrialba (2♀ SEMC, 1♂ USNM). **Heredia:** La Selva Biol. Sta. 10°26'N 84°01'W (1♂ PMAE). **San Jose:** Santa Ana 3,000' (1♀ MCZC). **ECUADOR:** **Guayas:** Los Duendes, S. Bolivar (4♂ 5♀ MCZC). **Napo:** Puerto Miashualli, 30km E. (2♂ 1♀ PMAE). Tena 400m (4♂ 1♀ PMAE). Tena-Puyo Hwy. 5km N. Santa Clara (1♂ PMAE). **Pastaza:** Puyo (1♂ USNM). **Pichincha:** Guayllabamba 10km on Río Pisque 2,500m (2♀ PMAE). 16km SE. Sto. Domingo, Tinalandia 500m (1♀ CNCI). Tinalandia 800m (1♀ PMAE). **Zamora-Chinchipe:** Río Jumboe (Zamora) (1♂ AEIC, 2♂ MCZC). Yantzaza (1♂ 1♀ MCZC). **EL SALVADOR:** **La Libertad:** Santa Tecla 900–950m (2♂ USNM). **San Salvador:** San Salvador (2♂ 3♀ USNM). **GUATEMALA:** **Guatemala:** Guatemala City (3♂ BPBM). **MEXICO:** Chis., 32mi W. [San Cristobal] Jct. 190–195 Hwys. (1♀ CNCI) **Chiapas:** 100km SE. Palenque Bonampak (1♀ PMAE). **Oaxaca:** Donaji (1♀ ANIC). **San Luis Potosi:** El Bonito 7mi S. ciudad Valles 300' (1♂ CASC). **Sinaloa:** Villa Union (1♂ MCZC). **Veracruz-Llave:** Veracruz (1♂ BMNH, 1♀ USNM). **PANAMA:** **Canal Zone:** Tabernilla (1♀ USNM). **PARAGUAY:** [San Pedro/Grl. Artigas] (1♀ AEIC). **Caaguazu:** Caaguazu (1♀ IIES). **Central:** Asuncion (1♀ BPBM, 4♀ USNM). **Cordillera:** S. Bernardino (6♀

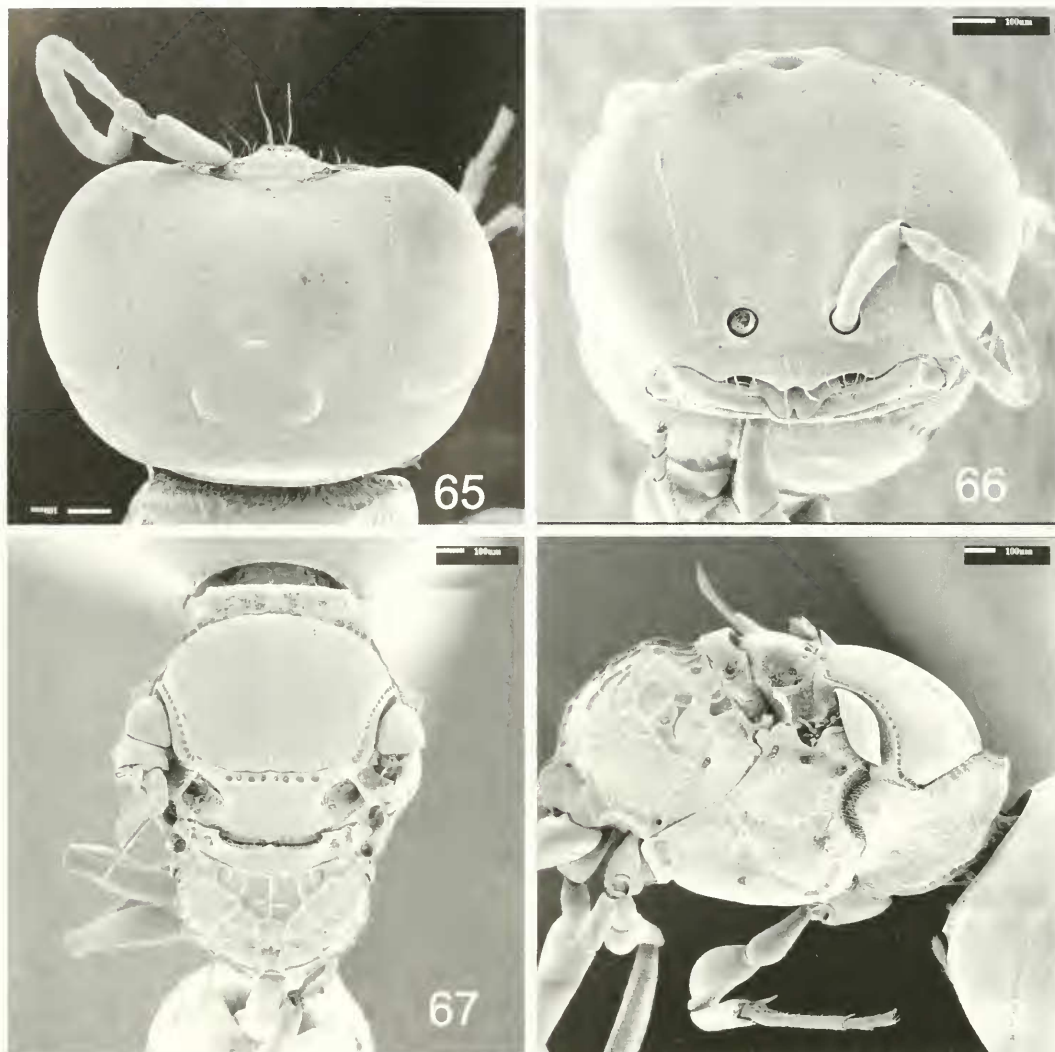
NHFW). **Itapua:** Pirapo (1♀ CNCI, 1♀ IIES). **PERU:** [Rio Perepe] (1♀ USNM). **Cuzco:** Cuzco-Abancay road, Apurimac crossing at Cuya 1,900m (1♀ BMNH). Quillabamba (2♂ 1♀ PMAE). Quincemil nr. Marcapata (1♂ AEIC). Río Urubamba 3km above Machu Picchu 2,050m (1♀ BMNH). **Huanuco:** Huanuco 1,850m (1♂ BMNH). [Los Palmas] SW 1,000m (1♂ CASC). Monzon Valley, Tingo María (3♂ 3♀ CASC). Tingo María (1♂ PMAE). Tingo María, Cueva de Las Pavas (1♀ IMLA). Tocache (1♀ PMAE). **Junin:** Satipo (1♂ PMAE). Satipo [Paratuchali] (1♂ PMAE). **Madre de Dios:** [Laberinto], 70km W. Puerto Maldonado (1♀ PMAE). **SURINAME:** **Marowijne:** 80km E. of Paramaribo on Albina Hwy. (1♀ PMAE). **TRINIDAD & TOBAGO:** [no locality] (1♂ MCZC). [Aripo Valley] (2♂ 3♀ FSCA). [Caranage] (1♀ USNM). Morne Bleu (1♀ AEIC). River Estate (1♂ USNM). **Caroni:** Brasso (1♂ BMNH). Gran Couva (2♂ 2♀ BMNH). Pepper (1♂ BMNH). **Nariva:** Ecclesville (1♀ BMNH). [Nariva Reservoir] (1♂ BMNH). [Machapore Hill] (1♀ BMNH). **Mayaro:** Trinity Hills Reserve (1♂ 1♀ BMNH). **Port-of-Spain:** Port-of-Spain (1♂ USNM). **St. George:** Arima-Blanchisseuse road 8th mi. (3♂ 1♀ USNM). Arena Reserve (2♀ BMNH). Arima Ward, Simla N.Y. Zool. Soc. Sta. (1♂ FSCA). Arima Valley (2♀ BMNH). Aripo Valley (2♀ BMNH). Caura (1♂ 1♀ BMNH). El Tucuche south slope (1♂ BMNH). El Tucuche west slope (1♂ 1♀ BMNH). Hillsborough Dam (1♂ 1♀ BMNH). Lopinot (1♂ 1♀ BMNH). Maracas Bay Village (4♂ 7♀ USNM). Maracas Valley (2♂ 1♀ BMNH). [Point Gourde] (1♀ BMNH). St. Augustine (6♂ 8♀ BMNH). Sta. Margarita, Curepe (1♂ 3♀ BMNH, 1♀ CNCI, 1♀ PMAE). Simla-Arima, Blanchisseuse Rd. nr. 4 1/4mi Post (1♂ 1♀ FSCA). Simla Field Sta. Arima Valley (8♀ FSCA). Simla Res. Sta. (3♀ FSCA). Tumpuna Reserve (1♀ BMNH). **St. Patrick:** Aripo Savanna (1♂ USNM). **San Fernando:** San Fernando Hill (2♂ USNM).

Tobago: [no locality] (1♂ BMNH). Adelphi, 1mi ESE. (5♂ 1♀ FSCA). Archibold Estate, Roxborough (8♂ USNM). Back Hill roadside 700' (1♂ 1♀ BMNH). Caledonia Rd. Cocoa plantation (1♂ BMNH). Roxburgh, Parlatuvier Rd. 2nd milestone (1♂ 1♀ BMNH). St. John, Blood Bay (1♀ BMNH). St. John, Cambleton (1♀ BMNH). St. John Prov. Hermitage River bridge, Charlotteville (1♂ USNM). St. Paul, Delaford (1♂ 1♀ BMNH). St. Paul, Parlatuvier Valley (1♂ 1♀ BMNH). **UNITED STATES:** **Texas:** Brownsville (1♂ CASC, 1♀ MCZC). Cameron Co., Southmost. (1♀ SEMC). Hidalgo Co., Bentsen Río Grande Valley St. Pk. (2♀ USNM). **VENEZUELA:** Miranda-[Nucleo El Lanrel] 1200–1300m (1♂ IZAV). **Bolívar:** La Gran Sabana, Rd. to Kavanayen, 9km Chivatón 1,310m. (1♂ MTEC). **Carabobo:** Los Guayos (1♂ 1♀ IZAV). **Distrito Federal:** Caracas (1♂ USNM). **Lara:** [no locality] (1♀ MCZC). Barquisimeto (1♀ MJMO). Cabudare 450m (1♂ MJMO). Sanare (1♂ AEIC). **Merida:** Merida, Sta. Rosa 2,000m (1♀ PMAE). **Zulia:** El Tucuco (3♀ AEIC, 2♀ PMAE). El Tucuco 45km SW. of Machiques (1♀ USNM). Maracaibo (2♀ AEIC).

16. *Incastigmus paranicus* Finnamore
new species
Figs. 65–68

Derivation of Name.—The name *paranicus* is derived from the distribution of this species in the Río Paraná watershed of Southern South America.

Diagnosis.—Males of this species are easily recognized on the basis of the linear micropore field between the lateral ocellus and compound eye, pronotal lobe rounded, and a ventral setal brush on the flagellomeres. Females are more difficult to recognize, but the following combination of characters may help in recognition: clypeus with long setae arising from narrowly separated subapical pits on median clypeal lobe, clypeal surface not obscured by setae, gena without ventral tooth or



Figs. 65–68. *Incastignus paranicus* ♀. 65, Head, dorsal. 66, Face. 67, Mesosoma, dorsal. 68, Mesosoma, lateral.

swelling, pronotal lobe rounded and white, mesosoma otherwise black, scutum with at most the median groove complete, mesopleuron with lower half of hypoepipimeral area shiny and without microsculpture, foveae of omaulus, scrobal sulcus and hypersternaulus relatively small so that the mid mesopleural area appears comparatively larger, and metasomal tergum I shiny, without microsculpture. This species closely resembles *aylaxiter* and *neotropicus* from which it differs in the male by the ventral brush of setae on the fla-

gellomeres and in the female by less extensive microsculpture, particularly on the lower half of the hypoepipimeral area (shiny in *paranicus* and dull in *aylaxiter*), and by the sparse setae of the clypeus (not obscuring the underlying sculpture in *paranicus*, unlike most *neotropicus*).

Male.—Length 3.75–4.5 mm. HEAD. Flagellomeres I–XI with tyli; tylus on flagellomere XI imparting an asymmetrical appearance, apex conical; flagellomeres with a ventral brush of specialized setae; flagellomere I length $1.5 \times$ maximum width;

flagellomere X length $1.5 \times$ apical width; clypeus obscured by dense appressed setae which extend up frons along inner eye margin to little more than the height of antennal socket; head nearly completely microsculptured, with microsculpture of frons merging with that of vertex; punctures of upper frons sparse, irregular, three or more diameters apart; gena microsculptured throughout, or more shiny in lower area, with punctures sparse, often obscured; gena smoothly rounded in ventral region without tooth or swelling; micropore field present as a long linear groove between compound eye and lateral ocellus; without depression behind it; OOD 1.3 to $1.5 \times$ LOD. MESOSOMA. Transverse pronotal carina ending at humeral angle in a right angle and ventrally in a tooth; transverse pronotal groove of pronotum longitudinally carinate; pronotal lobe rounded with a weak anterior carina; lateral pronotal region with longitudinal striae; scutum microsculptured throughout, punctures sparse, irregular and 3 or more diameters apart; notauli attenuated near scutal midlength; median scutal groove attenuated near scutal midlength, sometimes reaching admedian lines; posterior margin of scutum with several short longitudinal ridges. Scutellum microsculptured with a weak median longitudinal sulcus and a few punctures laterally. Sculpture of preomalar area not obscured by setae. Mesopleuron weakly microsculptured, sometimes shiny, punctures sparse and many diameters apart; hypersternaulus, scrobal sulcus, and omaulus foveolate, with foveae relatively smaller than in other species, so that the mid mesopleural area appears comparatively larger. Mesopleuron weakly microsculptured, with short longitudinal carinae on posterior margin. Propodeum shiny, with microsculpture weak, if present; propodeum entirely areolate, except shiny area adjacent to metapleuron; propodeal areolae relatively weaker than in other species; propodeal enclosure well-

defined. METASOMA. Tergum I shiny, succeeding terga with an oily sheen; tergal punctures minute, sparse and obscure; sterna with an oily sheen, punctures sparse generally more dense medially and reaching greatest density on sternum VI where minute punctures are 1–2 diameters apart. COLOR. Black. White: pronotal lobe. Yellow-brown: mandibles, except apex; palpi; scape; pedicel; flagellomere I ventrally; tegula; fore leg, except coxa; mid-leg, except coxa; hind tarsus.

Female.—Length 4–4.5 mm. Similar to male except as follows: flagellomere I length $1.7 \times$ maximum width; flagellomeres without tyli, entirely setose. Clypeus shiny, without microsculpture, with punctures sparse, separated by 2 or more diameters medially; median clypeal lobe with 2 teeth separated by slight emargination and long setae arising from pair of narrowly separated subapical pits; sculpture of frons along lower inner eye margin not obscured by setae; micropore field present as an oval or triangular elongate patch between compound eye and ocellus; OOD $2.2 \times$ LOD. Color similar to male, except femora of legs darker.

Material Examined.—34 ♂, 60 ♀. HOLOTYPE MALE: Bolivia: Micapaca, La Paz 5-III-1968 Garcia & Porter (MCZC). Paratypes: ARGENTINA: Catamarca: Suncho 12-X-1968. Porter (1♀ MCZC). Distrito Federal: Bs. Aires 4-V-1912 J. B. (1♀ MACN). Jujuy: [Camino Cormisa] II-1984 Fritz (1♀ IIES). Jujuy: 12-I-1966 H. & M. Townes (1♀ AEIC); 14-I-1966 H. & M. Townes (1♀ AEIC). Los Perales 12-II-1951 Mouros, Willink (1♂ IMLA). Posta Lozano: 15-20-XII-1967 C. Porter (1♀ MCZC); 27-X-2-XI-1968 C. Porter (1♂ 12♀ MCZC); 21-23-III-1969 C. Porter (1♀ MCZC); 29-X-4-XI-1968 C. Porter (5♀ MCZC). Posta de Lozano: 21-23-III-1969 C. Porter (3♂ MCZC); 26-X-1969 C. Porter (1♀ IMLA). Salta: Ruta 51, El Golgota IV-1970 O.H. Casal (1♂ 1♀ IIES). Rosario Lerma X-1984 Fritz (9♂ 6♀ IIES). [Vezenyi], Metan I-1906 (1♀ HNHM). Tucuman: Dpto. Taff

Horco Molle 24-XI-1971 C. Porter (1♂ IMLA). Horco Molle, Tucuman: 6-15-X-1967 C. Porter (1♀ MCZC); 1-15-XI-1967 C. Porter (1♂ MCZC); 10-23-XII-1967 C. Porter (4♀ MCZC); 9-30-IV-1968 C. Porter (1♂ 1♀ MCZC); 1-9-X-1968 C. Porter (1♂ MCZC, 3♀ PMAE); IX-X-1968 C. Porter (2♀ MCZC, 1♀ CNCI); 15-IX-1-X-1968 C. Porter (1♀ MCZC); XII-1968 C. Porter (1♀ CNCI). Villa [Nogues] 24-XII-1965 H. & M. Townes (5♂ 1♀ AEIC). Horco Molle, Tucuman, Parque Sierra San Janvier 700m 15-1-1976 L. Stange (1♂ 2♀ IMLA). [San Janvier]: 21-X-1950 M. Aczel (1♂ IMLA); 1100m VII-1977 R. Goldbach MT (1♀ FSCA); 1100m 1-15-XII-1977 R. Golbach (2♀ FSCA). S. Pedro Colalao 15-19-XII-1964 C. Porter (3♂ MCZC). Tacanas 10-XII-1977 L. Stange (1♀ FSCA). Trancas Fritz (3♂ IIES). 20km W. S.M. de Tucuman 10-XII-1971 D.J. Brothers (1♀ SEMC). Villa Nougues: 5-8-XII-1964 1250m C. Porter (1♀ MCZC); 13-I-1966 L. Stange (1♀ IMLA). Villa Padre Monti (1♀ IIES). **BOLIVIA: La Paz:** [Micapaca] 5-III-1968 Garcia & Porter (2♂ MCZC). **BRAZIL: São Paulo:** São Paulo: 20-VIII-1968 V.N. Alin (1♀ USNM); 14-X-1968 V.N. Alin (1♀ USNM).

17. *Incastigmus propherodontis*
Finnamore new species

Derivation of Name.—*Propherodontis* is derived from the Greek terms, *prophorixos*, meaning oral, and *odontis*, meaning tooth, in reference to the slight tooth-like swelling on the lower gena of the female.

Diagnosis.—Females of this species are similar to *hexagonalis* in possessing a tooth-like swelling on the lower genal region, the tooth is smaller. Also, the median clypeal lobe does not terminate in a pair of teeth separated by a deep emargination (as it does in *hexagonalis*), but is truncate and without teeth. Males of this species are more difficult to separate from other species. They do not have a swelling on the lower gena and therefore cannot be confused with *hexagonalis*. The following

combination of characters will separate the males of this species its congeners: the median scutal groove contiguous with the admedian lines; flagellomeres without tyli, and length not more than $2 \times$ apical width; extensive shiny areas on vertex, gena, and posterior $2/3$ of scutum; micropore field oval; pronotal lobe rounded; and the mesosoma black.

Male.—Length 3.5 mm. HEAD. Flagellomeres without tyli or specialized setae; flagellomere I length $2 \times$ apical width; flagellomere X length $1.2 \times$ apical width; flagellomere XI straight, cylindrical, apex conical. Clypeus obscured by dense appressed setae which do not extend up frons along inner eye margin; frons microsculptured; vertex shiny, sparsely punctate, punctures 2 or more diameters apart; a small oval micropore field present between compound eye and lateral ocellus; without depression behind it; gena shiny, with sparse irregular punctures, with those of ventral region 3 or more diameters apart; gena without ventral tooth, or swelling; lateral ocelli closer to each other than to compound eyes; OOD $1.6 \times$ LOD. MESOSOMA. Transverse pronotal carina toothed at humeral angle, and toothed medially and ventrally (6 teeth total); transverse pronotal groove longitudinally striate; pronotal lobe rounded with a weak anterior carina; lateral pronotal area longitudinally striate. Anterolateral third of scutum weakly microsculptured, otherwise shiny, with strong, sparse, punctures, 4 or more diameters apart; notauli extending to the posterior third of the scutum; median scutal groove extending anteriorly to the admedian lines; posterior scutal margin with several short ridges parallel to median groove. Scutellum shiny, microsculptured posteriorly, with median longitudinal sulcus well developed and several punctures in the median lateral area. Mesopleuron shiny, without microsculpture, with several scattered punctures; premaular area anteriorly with sparse setae and sculpture visible;

hypersternaulus, scrobal sulcus, and omaulus, coarsely foveolate; metapleuron weakly microsculptured, with several longitudinal striae. Propodeum shiny, with weak microsculpture, coarsely areolate except area adjacent to metapleuron which is shiny and irregularly microstriate; propodeal enclosure not differentiated from lateral spheres. METASOMA. Tergum I shiny, without microsculpture, with sparse obscure punctures; succeeding terga with oily sheen. Sterna shiny, without microsculpture, punctures sparse and irregular, increasing only slightly in density on more posterior sterna. COLOR. Black. White: tip of pronotal lobe. Yellow-brown: palpi; mandible, except apex; antenna; pronotal lobe, except tip; tegula; fore leg, except coxa and fore femur; mid tibia and tarsus; hind tibia and tarsus; apical sterna.

Female.—Length 4.5–5.0 mm. Similar to male except as follows: clypeus shiny, sparsely setose, sparsely punctate; clypeal punctures in median area 2 or more diameters apart; median clypeal lobe truncate, without teeth, long setae arising from subapical pits on median clypeal lobe; sculpture of frons along inner eye margin not obscured by appressed setae; lower gena with a small swelling adjacent to hypostomal carina; OOD $2.4 \times$ LOD; pronotal lobe pointed, conical; color as in male, except white basally on mandibles, and yellow-brown on pronotal lobe, and midleg, except coxa.

Material Examined.—1 ♂, 7 ♀. HOLOTYPE FEMALE: Brazil: Goias: Jatai XI-1972 F.M. Oliveira (CNCI). Paratypes: **BOLIVIA: La Paz:** Chulumani 1,700m 26-III-1979 M. Cooper B.M. 1979–216 (1♀ BMNH). **BRAZIL: Minas Gerais:** Aguas Vermelhas 15°45'S 11°28'W 800m XII-1983 Alvarenga (1♀ AEIC). **COLOMBIA: Cauca:** [San Andres de Pisimbaia] c 60km E. of Popayan 15-16-X-1971 1800m M. Cooper B.M. 1972–275 (1♀ BMNH). **ECUADOR: Napo:** Tena, 23-II-1923 F.X. Williams (1♂ BPBM). **PANAMA: Canal Zone:** Summit X-1946 N.L.H. Krauss (1♀

USNM). **TRINIDAD & TOBAGO: St. George:** Arena Reserve 31-VII-1976 J.S. Noyes B.M. 1976–462 (1♀ BMNH). **VENEZUELA:** [San Esteban] X-1939 P. Anduze (1♀ USNM).

18. *Incastigmus pycnoglypticus* Finnamore new species

Derivation of Name.—The name *pycnoglypticus* is derived from the Greek *pycnos*, meaning dense, and *glypticos*, meaning sculptured, in reference to the dense microsculpture of the first metasomal tergum.

Diagnosis.—The dull, densely microsculptured first metasomal tergum of this species is unique in the genus.

Male.—Length 4.5–5.0 mm. HEAD. Flagellomeres without tyli or brush of specialized setae; flagellomere I length $1.8 \times$ maximum width; flagellomere X length $1.3 \times$ maximum width; flagellomere XI straight, cylindrical, apex conical. Clypeus obscured by dense appressed setae which extend up frons along inner margin of eyes to height of antennal socket; head microsculptured, almost uniformly so; vertex and frons not distinguished from each other by differences in microsculpture, with punctures sparse; micropore field present as an oval patch between lateral ocellus and compound eye, without depression behind it; gena microsculptured throughout, obscurely punctate, nonstriate, without ventral swelling or tooth; lateral ocelli closer to each other than to compound eye, OOD $1.9 \times$ LOD. MESOSOMA. Transverse pronotal carina toothed at humeral angle and ventrally; transverse pronotal groove longitudinally striate; pronotal lobe rounded, not produced, carinate, or toothed; lateral pronotal area with longitudinal striae. Scutum microsculptured; scutal punctures sparse, irregular, 3 or usually many more diameters apart; notauli attenuated posteriorly near scutal midlength, median scutal groove not reaching admedian lines, attenuated anteriorly near scutal midlength. Scutel-

lum microsculptured, with several punctures laterally. Mesopleuron dull, microsculptured, impunctate. Preomalar area without setae; hypersternaulus with several coarse foveae; scrobal sulcus and omaulus foveolate; metapleuron dull, microsculptured, impunctate. Propodeum dull, microsculptured, coarsely areolate over lateral spheres and propodeal enclosure which are not differentiated; irregular striae adjacent to metapleuron. METASOMA. First tergum dull, microsculptured; succeeding terga with oily sheen, without obvious microsculpture. Sterna somewhat more shiny than terga, with sparse punctures becoming increasingly dense on posterior sterna. COLOR. Black. White: pronotal lobe. Yellow-brown: mandible, except apically; palpi; scape; pedicel; and flagellomeres I-V; fore leg, except coxa and median two-thirds of femur; mid leg beyond femur; hind tarsus.

Female.—Length 5.5–6 mm. Similar to male except as follows: flagellomere I length $2.1 \times$ maximum width; clypeus shiny, sparsely punctate, sparsely setose; median clypeal lobe with a pair of teeth separated by a median emargination; with long setae arising from subapical pits in median teeth. OOD $3.5 \times$ LOD.

Material Examined.—2 ♂, 7 ♀. HOLOTYPE FEMALE: Brazil: Nova Teutonia: Sta. Cat. 18-II-1962 Fritz Plaumann (MCZC). Paratypes: **BRAZIL**: [Maua] X-20, NLH Krauss (1♂ USNM). **Rio Grande do Sul**: Rio Gr. do Sul: Stieglmayr (1♀ NHMW). **São Paulo**: São Paulo: (1♂ 5♀ ZMUM).

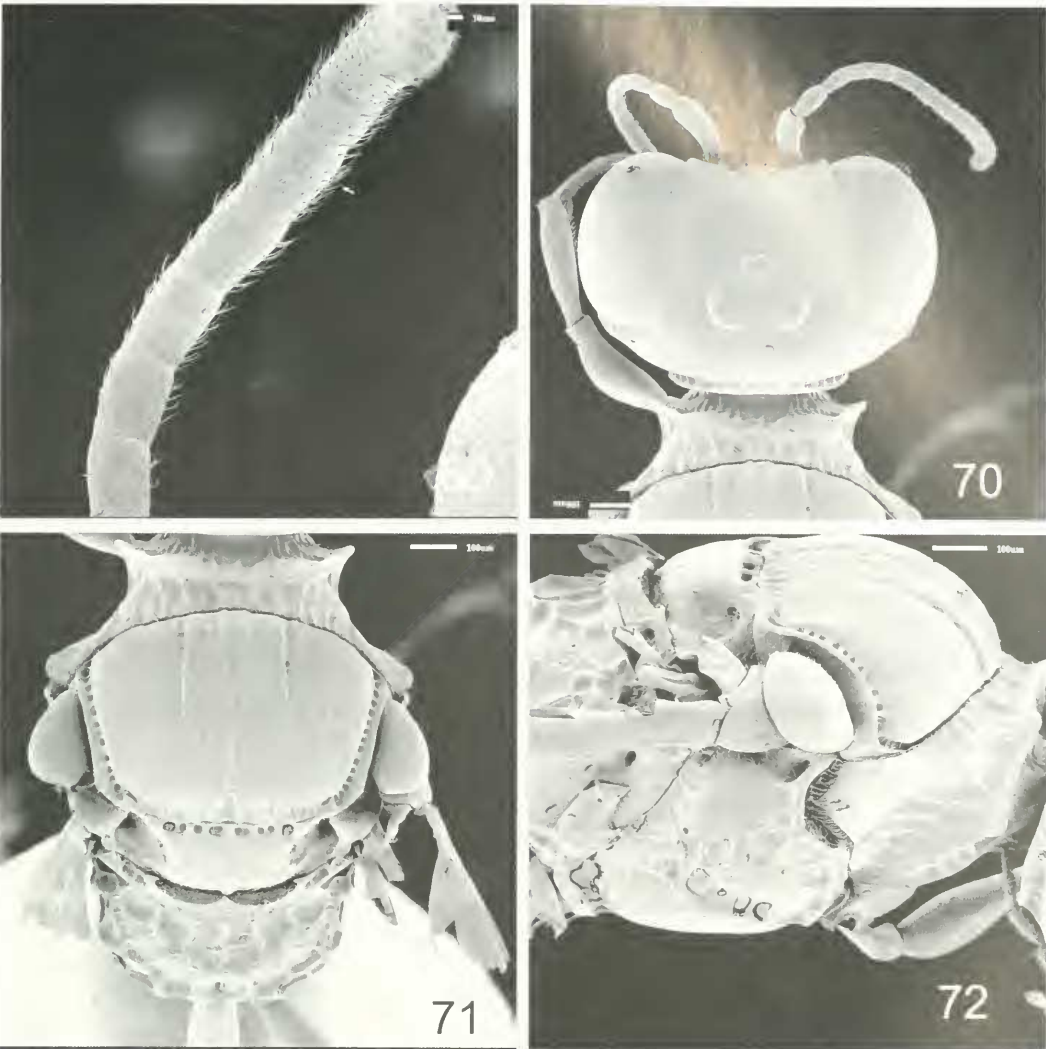
19. *Incastignus pyrrhopyxis* Finnamore
new species
Figs. 69–76

Derivation of Name.—*Pyrrhopyxis* is derived from the Greek *pyrrhos* meaning flame-colored, and *pyxis* meaning box, in reference to the orange-red mesosoma of most individuals of this species.

Diagnosis.—The red pronotum and the prominent lateral teeth are sufficient to

distinguish males and females of this species from all others in the genus. This species is distinguished from *thoracicus* by the well-developed median scutal groove. Females can be distinguished from *ignithorax* on the basis of the bidentate clypeus, and distinguished from its closest relatives *caelukhus* and *trichodocerus* by extensive red coloration and the presence of microsculpture on the vertex and hypopimeral area.

Male.—Length 3.5–4 mm. HEAD. Flagellum with a brush of setae on the ventral surface; tyli absent; flagellomere I length $1.8 \times$ apical width; flagellomere X length $1.3 \times$ apical width; flagellomere XI straight, cylindrical, apex conical. Head microsculptured, with microsculpture more dense on frons, weaker on ocellar region, and more dense on posterior vertex; clypeus obscured by dense appressed setae which extend narrowly up frons along inner eye margin about $2/3$ height of scape; micropore field present as an oval patch between lateral ocellus and compound eye, without a depression behind it; gena microsculptured, sparsely punctate, nonstriate; lower gena shiny, without ventral swelling; lateral ocelli closer to each other than to eyes, OOD $1.6 \times$ LOD. MESOSOMA. Transverse pronotal carina toothed at humeral angle, and ventrally; transverse pronotal groove with longitudinal striae; pronotal lobe rounded; lateral pronotal area longitudinally carinate. Scutum microsculptured anteriorly, shiny posteriorly; notauli often reaching posterior margin of scutum; median scutal groove present and complete; scutal punctures few and sparse. Scutellum with microsculpture. Mesopleuron microsculptured, impunctate; setae of preomalar area absent; hypersternaulus, scrobal sulcus, and omaulus, coarsely foveolate. Metapleuron weakly microsculptured. Propodeum shiny, without microsculpture, coarsely areolate over most of surface, unsculptured basolaterally; propodeal enclosure not differentiated from lateral spheres. METASOMA. Terga shiny, without

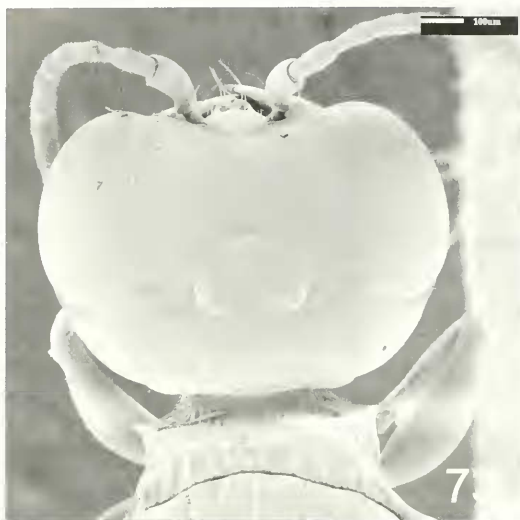


Figs. 69–72. *Incastignus pyrrhopyxis* ♂. 69, Mid flagellomeres of antenna with arrow indicating ventral setal brush in profile. 70, Head, dorsal. 71, Mesosoma, dorsal. 72, Mesosoma, lateral.

microsculpture; tergal punctures obscure, sparse. Anterior sterna shiny; posterior sterna weakly microsculptured, with punctures sparse, obscure. COLOR. Dark form: Black. Orange-red: pronotum, tergum VII. Yellow-brown: antenna, palpi, tegula, fore leg, mid leg, hind tibia basally, hind tarsus. White: mandible basal to apical teeth, pronotal lobe. Light form: Black. Orange-red: mesosoma. Yellow-brown: antenna; fore leg; mid leg; hind leg; tegula.

White: mandible basal to apical teeth; palpi; pronotal lobe.

Female.—Length 3.5–4 mm. Similar to male except as follows: flagellomere I length $2.6 \times$ apical width; clypeus shiny, with several punctures, setae sparse; median clypeal lobe weakly emarginate, long subapical setae arising from narrowly separated pits; OOD $1.6 \times$ LOD; color as above for light form, except propodeum rarely red.



Figs. 73–76. *Incastignus pyrrhopyxis* ♀. 73, Head, dorsal. 74, Face. 75, Mesosoma, dorsal. 76, Mesosoma, lateral.

Material Examined.—14 ♂, 27 ♀. HOLOTYPE MALE: COSTA RICA: Cartago, Turrialba 550 m CATIE 4-IX-1986. L. Masner (PMAE). Paratypes: COLOMBIA: Choco: 950–1000m 5°50'N 76°20'W 7-8-IV-1973 J. Helava Montane Rain Forest (1♀ PMAE). Magdalena: Bonda, Aug. Acc. No. 1999 (2♂ CMNH). Meta: Cord. Macarena 15-28-II-1976 M. Cooper B.M. 1976–305 (1♂ BMNH). Narino: Barbacoas 23-III-1974 M. Cooper B.M. 1974–327 (1♀ BMNH). Valle del Cauca: 3.2km E. Río

Aguaclara on old Cali Road 19-III-1967 R.B. Root, W.L. Brown (1♀ MCZC). COSTA RICA: Cartago: Turrialba C.A.T.I.E. Reventazon Gorge 10-IX-1980 J. Woolley (2♂ PMAE). Turrialba CR49F19 (2♀ USNM). Turrialba 15-18-VII-1965 P.J. Spangler (1♀ USNM). Guanacaste: Cañas 12mi SW 27-II-1964 25' H.E. Evans (1♂ MCZC). Heredia: F. La Selva 3km S. Pto. Viejo 10°26'N 84°01'W 1-IV-1985 H.A. Hespeneide (1♂ USNM). F. La Selva 3km S. Pto. Viejo 10°26'N 84°01'W 11-IV-1989

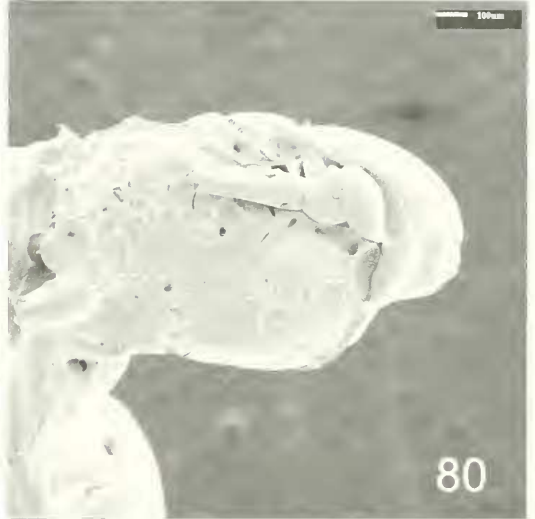
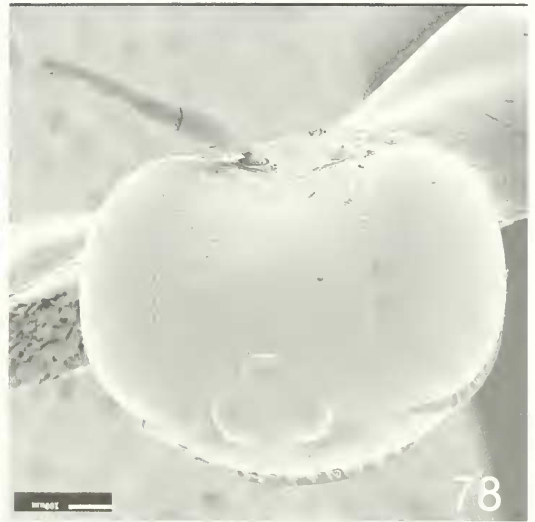
H.A. Hespenheide (1♂ PMAE). F. La Selva 3km S. Pto. Viejo 10°26'N 84°01'W 26-VI-1985 H.A. Hespenheide (1♀ USNM). Pto. Viejo 50m II-1980 W. Mason, rain forest (1♀ CNCI). **Puntarenas:** Las Tablas ENE. Las Mellizas 15km ENE. San Vito 28-V-1987 A.L. Norrbom (1♀ USNM). Manuel Antonia N. P. 28-VIII-1981 L. Masner (2♀ PMAE). Manuel Antonia N. P. 23-VIII-1986 L. Masner (1♀ PMAE). Manuel Antonia N. P. 24-VIII-1986 L. Masner (3♀ PMAE). Manuel Antonia N. P. 26-VIII-1986 L. Masner (6♀ PMAE). **ECUADOR:** **Napo:** Limoncocha 250m 15-28-VI-1976 S. & J. Peck (1♀ CNCI). **Pichincha:** 49km S. Sto. Domingo, Río Palenque Sta. 22-27-II-1976 S. Belwood (1♂ CNCI). Río Palenque 22-27-II-1976 (1♀ CNCI). 47km S. Sto. Domingo Río Palenque Sta. II-1976 Howden (1♀ CNCI). Tinalandia 2-II-1983 Masner, Sharkey (1♀ PMAE). **PERU: Loreto:** Iquitos NE. Río Nanay 6-II-1984 L. Huggert (1♀ PMAE). **TRINIDAD AND TOBAGO:** **St. George:** El Tucuche S. slope 25-VII-1976 J.S. Noyes Brit. Mus. 1976-462 (1♀ BMNH). **Tobago:** Rep. P. 21-22-IX-1918 G-229 H.P. Dietz (4♂ USNM).

20. *Incastigmus strepsilineatus* Finnamore new species

Derivation of Name.—The name *strepsilineatus* is derived from the Greek *strevlos*, meaning twisted, and the Latin *linea*, meaning line, in reference to the fingerprint-like propodeal sculpture of this species.

Diagnosis.—This species, known from a single male, can be recognized by the sculpture of its propodeum. This sculpture consists of fingerprint-like raised lines on the lateral areas and on the lateral spheres. Areolae are absent over these areas, absent on the propodeal enclosure, and absent on the posterior surface. The lack of areolate propodeal sculpture is unique in the genus. The presence of a linear micropore field indicates relationship with *neotropicus*, *paraenicus*, *aylaxiter*, *mytior*, and *ceronius*.

Male.—Length 3.5 mm. **HEAD.** Flagellomeres without specialized setae, tyli present as a line or fold on flagellomeres I to VII; flagellomere I length $1.5 \times$ maximum width; flagellomere X length $1.3 \times$ apical width; flagellomere XI straight, cylindrical, apex conical. Clypeus obscured by dense appressed setae which extend up frons along inner eye margin to $\frac{3}{4}$ height of scape; Head microsculptured, with vertex more shiny with weaker microsculpture; punctures of vertex sparse, irregular, 5 or more diameters apart in the median region; gena with weak microsculpture, sparsely punctate, without ventral tooth or swelling; micropore field present as a linear fold between compound eye and ocellus; without depression behind it; OOD $1.4 \times$ LOD. **MESOSOMA.** Transverse pronotal carina slightly toothed at humeral angle and ventrally; transverse pronotal groove, with weak longitudinal striae; pronotal lobe rounded, without anterior carina; lateral pronotal area longitudinally striate. Scutum shiny over posterior $\frac{2}{3}$ of surface, microsculptured anteriorly, with punctures sparse, irregular throughout, and 2 or more diameters apart on median area; notauli attenuating in posterior half of scutum; median scutal groove attenuating anteriorly near scutal midlength, not reaching admedian lines; posterior margin of scutum with a series of weak longitudinal ridges. Scutellum shiny, weakly microsculptured, without median sulcus, and with several punctures on lateral areas. Preomaular area with setae not obscuring underlying sculpture. Mesopleuron shiny, without microsculpture over most of surface; hypersternaulus, scrobal sulcus, and omaulus finely foveolate. Metapleuron shiny, without microsculpture and with several weak striae along posterior margin. Propodeum with fingerprint-like striae laterally, and on lateral spheres; propodeal enclosure defined by a carina, and irregularly, longitudinally striate. **METASOMA.** First tergum shiny, without microsculpture; succeeding terga with



Figs. 77–80. *Incastignus sunicerus* ♂. 77, Scape, pedicel, and basal 2 flagellomeres. 78, Head, dorsal. 79, Mesosoma, dorsal (prothorax missing). 80, Mesosoma, lateral (prothorax missing).

an oily sheen, punctures minute, sparse, obscure. Sterna shiny, with oily sheen, punctures sparse, irregular and not increasing in density on more posterior sternum. COLOR. Black. White: mandible, except apex; pronotal lobe. Yellow-brown: palpi; antenna; tegula; fore leg; mid leg; apex of hind coxa, hind trochanter, hind tibia, and hind tarsus.

Female.—Unknown.

Material Examined.—1 ♂. HOLOTYPE MALE: Venezuela: GU, San Juan de los

Morros 8-VIII-1964 J. & B. Bechyne (IZAV).

21. *Incastignus sunicerus* Finnamore
new species
Figs. 77–80

Derivation of Name.—*Sunicerus* is derived from the Quichuan word *sun*i, meaning long, and the Greek *keros*, meaning horn, in reference to the elongate antenna found in this species.

Diagnosis.—Males of this species are

easily distinguished by the elongate basal flagellomeres which reach well over $2 \times$ their apical widths. Females, unfortunately are not easily distinguished and are difficult to diagnose. The following combination of characters will help to identify females: clypeus with 2 long setae arising from a subapical transverse depression; clypeal sculpture visible, not obscured by dense appressed setae; gena without ventral tooth or swelling; occipital carina slightly raised ventrally; micropore field large, about $0.5 \times \text{OOD}$; mesosoma black, without red coloration, and with extensive shiny areas; pronotal lobes white, rounded; notauli incomplete, attenuated medially near scutal midlength; metasomal tergum I shiny, without microsculpture.

Male.—Length 4.0–5.0 mm. HEAD. Flagellomeres without tyli or specialized setae; flagellomere I length $2.3 \times$ apical width; flagellomere X length $2.0 \times$ apical width; flagellomere XI about $2 \times$ flagellomere X, and curved with roundly-truncate apex. Clypeus obscured by dense appressed setae which extend up frons along inner margins of eyes to about half height of scape; frons microsculptured, punctures obscure; microsculpture of vertex slightly less than that of frons, punctures sparse, 3 or more diameters apart; gena microsculptured, obscurely punctate, without ventral tooth or swelling; large oval microsculpture field ($0.5 \times \text{OOD}$) present between lateral ocellus and compound eye; without depression behind it; $\text{OOD } 1.4 \times \text{LOD}$. MESOSOMA. Transverse pronotal carina forming a tooth at humeral angle and ventrally; transverse pronotal groove longitudinally striate; pronotal lobe rounded, conical, anterior carina poorly developed; lateral pronotal area longitudinally striate. Scutum microsculptured anteriorly, shiny with less microsculpture posteriorly; scutal punctures on anterior half obscure, on posterior half course, 3 or more diameters apart; notauli extending slightly beyond scutal midlength and attenuating posteriorly; median scutal groove extending to

admedian lines; posterior scutal margin with, short, weak irregular carinae. Scutellum microsculptured, with several mediolateral punctures. Mesopleuron microsculptured and apparently impunctate; hypersternaulus, scrobal sulcus, and omaulus coarsely foveolate; metapleuron microsculptured, without longitudinal carinae. Propodeum shiny, weakly microsculptured, coarsely areolate, except area adjacent to metapleuron which is not sculptured; propodeal enclosure not differentiated from lateral spheres. METASOMA. Terga shiny, without microsculpture, succeeding terga with oily sheen, punctures obscure. Sterna with weak microsculpture, with punctures reaching greatest density on sternum III and beyond, 3 or more diameters apart. COLOR. Black. White: palpi; base of mandible; pronotal lobe. Yellow-brown: mandible, except base and apex; scape; pedicel; flagellomeres I–IV; tegula; fore leg, except coxa; mid leg, except coxa; hind trochanter, hind tarsus; and apical sternum.

Female.—Length 4–5 mm. Similar to male except as follows: flagellomere I length $1.6 \times$ apical width; flagellomere X $1.3 \times$ apical width; flagellomere XI about $1.5 \times$ length of flagellomere X, and straight. Clypeus with setae not obscuring underlying sculpture, with relatively dense, close punctures, separated in median area by 1–2 diameters; median clypeal lobe consisting of 2 teeth separated by a shallow emargination, with a subapical transverse depression from which long setae arise; frons along inner eye margin sparsely setose, sculpture not obscured; $\text{OOD } 2.2 \times \text{LOD}$.

Material Examined.—24 ♂, 16 ♀. HOLOTYPE MALE: Brazil: MG: Ouro Preto IV-1954 N.L.H. Krauss (USNM). Paratypes: **BRAZIL**: Minas Gerais: Barbacena 26-X-1905 Ducke (1♂ MPEG). Ouro Preto IV-1954 N.L.H. Krauss (3♂ 1♀ USNM). **São Paulo**: Ribeirão Pires: VI-1954 N.L.H. Krauss (1♂ USNM); 28-VI-1961 N.L.H. Krauss (2♂ USNM). São Paulo: (2♂ 3♀

ZMUM); 20-VIII-1968 V.N. Alin (2♂ USNM); 13-XII-1968 V.N. Alin (1♂ USNM); 10-X-1977 (1♂ ZMUM); 24-X-1977 (1♀ ZMUM); 12-IV-1978 (4♂ 1♀ ZMUM); 9-II-1979 (1♀ ZMUM); 25-VII-1979 (1♂ ZMUM); 16-VIII-1979 (3♀ ZMUM); 6-XII-1979 (1♀ ZMUM); 28-I-1981 (2♂ 1♀ ZMUM); 17-II-1981 (1♂ 1♀ ZMUM); 10-III-1983 (2♂ ZMUM). [Sao Vi] IX-1961 N.L.H. Krauss (1♀ USNM). **Rio de Janeiro:** Represa Rio Grande, Guanabara V-1972 M. Alvarenga (1♀ PMAE). **Santa Catarina:** Nova Teutonia, XII-1967 F. Plaumann (1♂ MCZC).

22. *Incastigmus thoracicus* (Ashmead)

Stigmus thoracicus Ashmead 1900: 223. Holotype, female (BMNH). St. Vincent W.I., H. Smith 238/ W. Indes 99–331 B.M. type Hym. 21.885; examined.

Stigmus smithii Ashmead 1900: 223. Holotype, male (BMNH). W. Indes 99–331 B.M. Hym. type 21.886; examined. Ashmead (1900) incorrectly described this specimen as a female.

Diagnosis.—Specimens with more extensive red coloration are distinguished by their red petiole. Darker (and lighter) specimens are distinguished by the full reduction of the median scutal groove, shiny hypopimeral area, and rounded corners of the transverse pronotal carina.

Male.—Length 3.0–3.8 mm. **HEAD.** Flagellomeres without tyli or specialized setae; flagellomere I length $2.0 \times$ apical width; flagellomere X length $1.1 \times$ apical width; flagellomere XI straight, cylindrical, apex conical. Head microsculptured, almost uniformly so; clypeus obscured by dense appressed setae which extend broadly up frons along inner eye margin to height of scape; vertex and frons uniformly microsculptured; upper frons and vertex with slightly less microsculpture and with sparse, obscure punctures; micropore field present as an oval patch between compound eye and lateral ocellus; without depression behind it; gena microsculptured, sparsely punctate, non-

striate, without ventral swelling or tooth; lateral ocelli closer to each other than to eyes. OOD $2.0 \times$ LOD. **MESOSOMA.** Transverse pronotal carina rounded at humeral angle, not toothed or produced; transverse pronotal groove with weak longitudinal striae; pronotal lobe rounded, not toothed; lateral pronotal area with several weak striae. Scutum shiny, weakly microsculptured; punctures minute, sparse; notauli present anteriorly; median scutal groove undeveloped, evident posteriorly as one of many weak foveae on posterior scutal margin. Scutellum and mesopleuron shiny, without microsculpture; mesopleuron impunctate, except sternopleural region with minute sparse punctures; pre-ocular area anteriorly with sparse setae; hypersternaulus without foveae; scrobal sulcus and omaulus weakly foveolate. Metapleuron microsculptured on ventral half, otherwise shiny, impunctate. Propodeum shiny, without microsculpture over most of basolateral surface and dorsolateral spheres; basolateral propodeal area adjacent to metapleuron without sculpture; propodeal enclosure weakly areolate, with smaller areolae than on dorsolateral spheres, the 2 groups of areolae separated by a smooth unsculptured area. **METASOMA.** Terga shiny, without microsculpture, punctures sparse, obscure. Sterna weakly microsculptured, punctures sparse but increasing in density on posterior sterna. **COLOR.** Dark form: Black. White: palpi; mandible, except apex; spot on pronotal lobe; hind tibia on base. Yellow to yellow-brown: antenna; pronotum, except dorsally and spot on pronotal lobe; mesopleuron, anteriorly; fore leg; mid leg; hind trochanter and tarsus; tegula. Light form: Black. White: palpi; mandible, except apically; spot on pronotal lobe; fore tibia and tarsus; mid tibia and tarsus; basal half or more of hind tibia, and tarsus. Yellow-orange: antenna; mesosoma, except propodeal dorsum; fore leg, basal to tibia; mid leg, basal to tibia; hind leg, basal to tibia

and apex of tibia; petiole, except ventral apex; apical 1 or more sterna.

Female.—Length 3.9 mm. Similar to male except as follows: flagellomere I length $3.0 \times$ apical width; clypeus shiny, with several punctures, setae sparse; clypeal lobe with a pair of median teeth separated by a shallow emargination and from which arise long setae; frons along inner eye margin sparsely setose, with sculpture not obscured; OOD $2.5 \times$ LOD; color, as above for light form, except white on scape and orange on clypeus and propodeal dorsum.

Material Examined.—5 ♂, 3 ♀. **DOMINICA**: Springfield (2♂ 2♀ USNM). Point Casse Rd (1♂ USNM). **GRENADA**: 2500 feet (1♂ MCZC). Botanical Garden (1♀ USNM). **ST. VINCENT**: [no locality] (1♀ BMNH). **WEST INDIES**: [no locality] (1♂ BMNH).

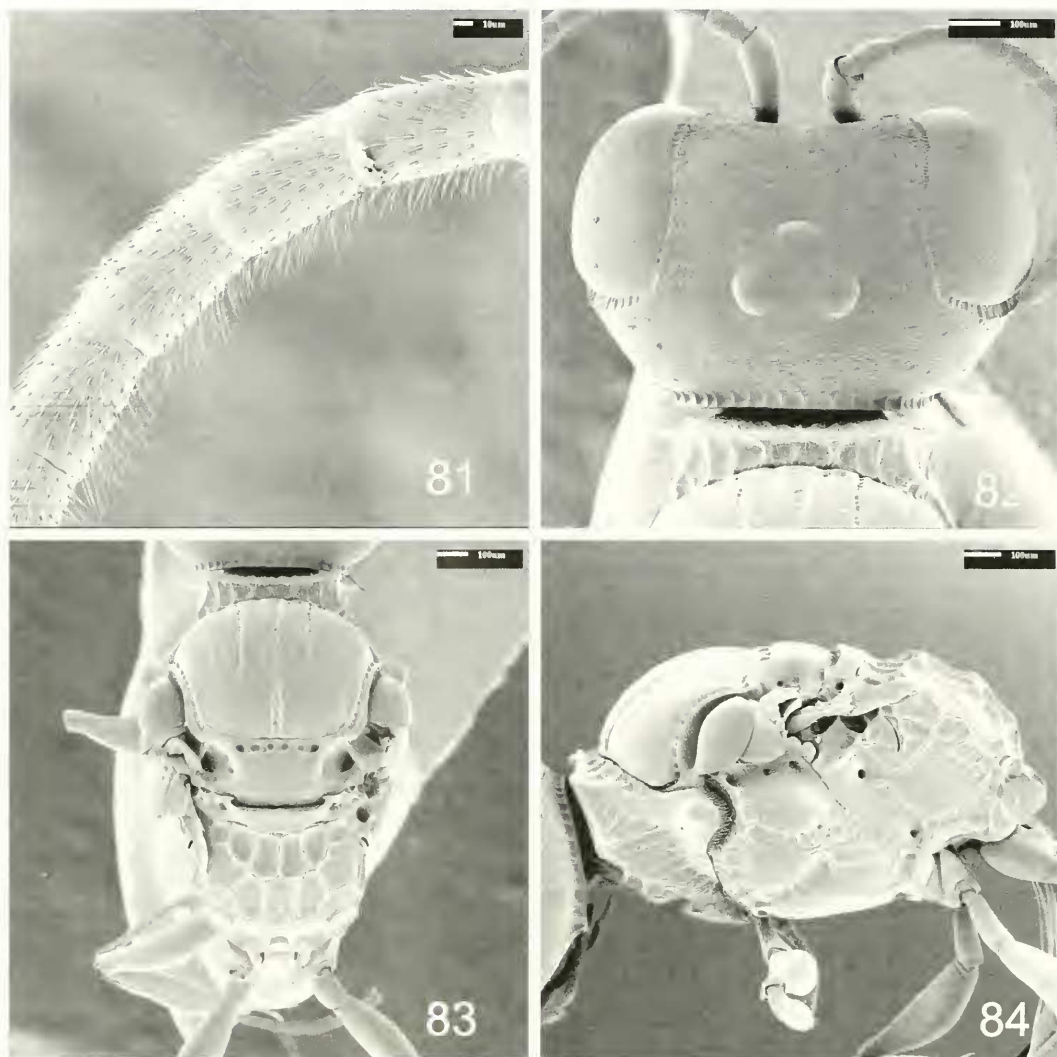
23. *Incastigmus trichodocerus* Finnamore
new species
 Figs. 81–88

Derivation of Name.—The name *trichodocerus* is derived from the Greek *trichodes*, meaning hairy, and *keros*, meaning horn, in reference to the specialized setae on the ventral surface of the antennae of members of this species.

Diagnosis.—Males can be recognized by the specialized setal brush on the ventral surface of the flagellum, shiny vertex, and oval micropore field. Females can be distinguished from other species on the basis of the median clypeal lobe which has a subapical semicircular depression, and a hypoepipimeral area which is without microsculpture on at least its ventral half. This species closely resembles *pyrrhopyxis* and *caelukhus*, which share a setal brush on the ventral surface of the flagellomeres. However, neither of these species has a shiny vertex in the male, or a shiny hypoepipimeral area in the female.

Male.—Length 3.5–4.0 mm. **HEAD**. Flagellomeres with a ventral brush of short setae, tyli absent; flagellomere I length 1.8

\times apical width; flagellomere X length $1.3 \times$ apical width; flagellomere XI straight, cylindrical, apex conical. Clypeus obscured by dense appressed setae which extend up frons along inner margins of eyes to about half height of scape; frons coarsely microsculptured, frons with area anterior to mid ocellus shiny, usually weakly microsculptured, sometimes without microsculpture; punctures on upper frons and vertex sparse, more or less evenly spaced, 3 or more diameters apart; oval micropore field present between compound eye and lateral ocellus, without depression behind it; gena weakly microsculptured with scattered punctures, without ventral tooth or swelling; lateral ocelli closer to each other than compound eye; OOD $2.0 \times$ LOD. **MESOSOMA**. Transverse pronotal carina forming a right angle at humeral angle and toothed ventrally; transverse pronotal groove longitudinally striate; pronotal lobe rounded, without anterior carina; lateral pronotal area longitudinally striate. Scutum variable, generally some degree of irregular longitudinal ridges present posteriorly, and microsculpture variable from absent to present on posterior half; notauli reaching mid-length of scutum, usually attenuating shortly thereafter, sometimes reaching posterior margin; median scutal groove reaching admedian lines and contiguous for short distance with them. Scutellum shiny or with weak microsculpture and a few lateral punctures. Preomaular area with sparse setae. Mesopleuron shiny, microsculpture not present; punctures weak, sparse, many diameters apart; hypersternaulus, scrobal sulcus, and omaulus coarsely foveolate. Metapleuron microsculptured, with several short longitudinal ridges on posterior margin with propodeum. Propodeum shiny, without microsculpture, or sometimes with weak microsculpture; propodeum coarsely areolate except for shiny, unsculptured area adjacent to metapleuron; propodeal enclosure not differentiated from lateral

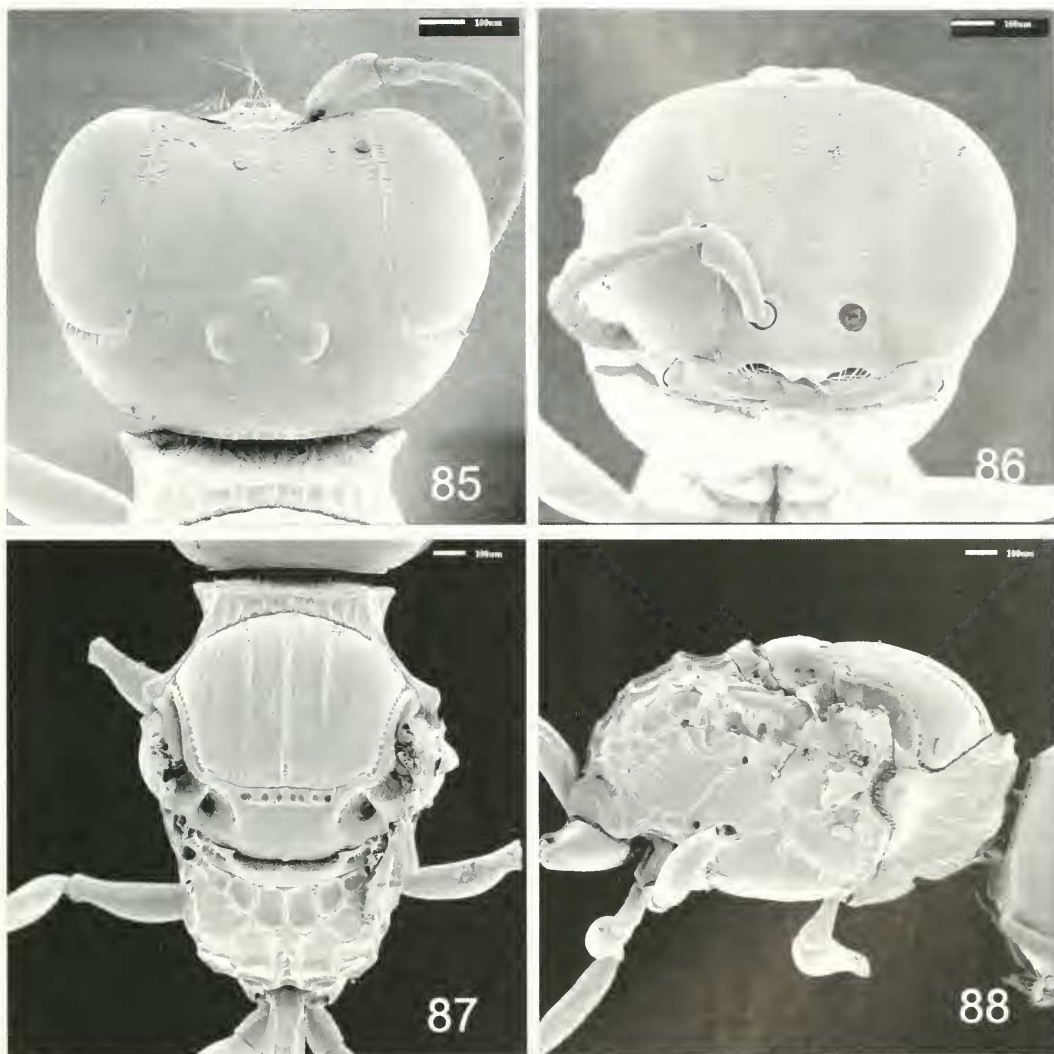


Figs. 81–84. *Incastignus trichodocerus* ♂. 81, Mid flagellomeres of antenna with setal brush (erect setae) in profile. 82, Head, dorsal. 83, Mesosoma, dorsal. 84, Mesosoma, lateral.

spheres. METASOMA. First tergum shiny, without microsculpture, succeeding terga with an oily sheen, punctures minute, sparse, many diameters apart; sterna shiny, without microsculpture, with oily sheen; punctures sparse on anterior sterna but increasing in density on more posterior sterna; punctures on sternum VI about 2 diameters apart on lateral area and impunctate medially. COLOR. Black. White: mandible except apex; pronotal lobe. Yellow-brown: palpi; scape; pedicel;

ventrally on flagellomeres I–V or more; tegula; fore leg, except coxa; mid leg, except coxa and femur; hind tarsus; apical tergum and sternum.

Female.—Length 4.0 mm. Similar to male except as follows: flagellomeres with ventral setae, but not forming a brush; flagellomere I length $1.7 \times$ apical width; clypeus shiny, setae sparse, sometimes with weak microsculpture, punctures 1–2 diameters apart medially; median clypeal lobe truncate with subapical semicircular



Figs. 85–88. *Incastigmus trichodocerus* ♀. 85, Head dorsal. 86, Face. 87, Mesosoma, dorsal. 88, Mesosoma, lateral.

depression from which long setae arise; frons along inner eye margin between compound eye and antennal socket partially obscured by setae; OOD $1.8 \times$ LOD; notauli of scutum often reaching posterior scutal margin; punctures of sternum VI on lateral regions about 1 diameter apart.

Material Examined.—75 ♂, 147 ♀. HOLOTYPE MALE: Ecuador: Pichincha Prov. Tinalandia, 16 km S. Sto. Domingo 15-VI-1975 S. & J. Peck (PMAE). Paratypes: BRAZIL: São Paulo: São Paulo (1 ♀

ZMUM). COLOMBIA: Meta: Restrepo 18-VI-1974 L. Stange (1 ♀ IMLA). Norte de Santander: Santiago 2–4000' 11-V-1974 J Peck (1 ♂ PMAE). ECUADOR: [Bucay] 1000': 9-X-1922 F.X. Williams (1 ♀ BPBM); 10-X-1922 F.X. Williams (1 ♂ 1 ♀ BPBM). [Huigra] 4000' 31-V-1923 F.X. Williams (1 ♀ BPBM). Los Ríos: Quevedo IV-1976 Fritz (1 ♀ IIES). Napo: Puerto Misahualli 350m II-1983 Sharkey (1 ♀ PMAE). Pichincha: Garrapata W. Sto. Domingo 28-XII-1970 Luis E. Pena (1 ♂ AEIC). Quito/S.

Domingo 600/1000m 3-I-1971 Luis E. Pena (1♂ AEIC). Río Palenque: II-1976 G.E.S (1♂ PMAE); 22-II-1976 G. Shewell (1♀ PMAE); 22-27-II-1976 (1♀ CNCI); 4-II-1983 Masner & Sharkey (6♂ 1♀ PMAE). Río Palenque Res. Sta. II-1983 200m M. Sharkey & L. Masner (8♂ 4♀ PMAE). 16 km S. Sto. Domingo 15-VI-1975 S. & J. Peck (10♂ 23♀ PMAE); 44km S. Santo Domingo Río Palenque Res. Sta. 22-27-II-1976 J. Belwood (1♀ CNCI). 47 km S. Sto. Domingo Río Palenque Sta.: 22-31-VII-1976 S. & J. Peck (4♂ 4♀ CNCI); 29-IV-5-V-1987 Brown & Coote 160–180m rainforest (4♀ PMAE). Sto. Domingo 16km SE. Tinalandia 500m 4-14-VI-1976 S. & J. Peck (12♂ 52♀ CNCI). 15 km E. Sto. Domingo Tinalandia 2000' 25-26-II-1981 Howden (1♀ PMAE). Tinalandia: 680m 15-30-VI-1975 S. & J. Peck (2♂ PMAE); 14-VI-1976 S. & J. Peck (2♂ 16♀ PMAE); 2-II-1983 M. Sharkey & L. Masner (6♂ 9♀ PMAE); 800m II-1983 M. Sharkey & L. Masner (8♂ 2♀ PMAE); 800m III-1983 M. L. Masner & M. Sharkey (1♂ 5♀ PMAE). Tinalandia, 16km SE. Sto. Domingo 14-VI-1976 S. & J. Peck (1♀ PMAE). Tinalandia, 16km SE. Sto. Domingo 680m 15-30-VI-1975 S. & J. Peck (11♀ CNCI, 1♀ PMAE). **Tungurahua:** Yanayacu 300m 29-30-VIII-1977 L.E. Pena B.M. 1978–293 (1♂ BMNH). **PARAGUAY:** **Cordillera:** Piareta XII-1971 Pena (1♀ IIES). **PERU:** **Cuzco:** Quillabamba 23-27-XII-1983 L. Huggert (3♂ PMAE). **Huanuco:** Tingo María 10-12-VII-1974 C. Porter, L. Stange (1♂ IMLA). 26mi E. Tingo María 1100m 10-XII-1954 E.I. Schlinger, E.S. Ross (1♂ CASC). **Junin:** Satipo 18-I-1984 L. Huggert (1♂ PMAE). **Piura:** [Querecotillo] 23-VII-1982 R.B. Miller, L.A. Stange (1♂ FSCA). **SURINAME:** **Brokopondo:** Brownsberg 12-18-I-1985 T.W. Thormin (1♀ PMAE). **TRINIDAD & TOBAGO:** **Tobago:** Archibald Estate, Roxborough 6-XI-1918 H. Morrison (1♀ USNM). **VENEZUELA:** **Zulia:** El Tucuco 200m 26-IV-1981 L. Masner (1♂ PMAE). Maracaibo 24-IV-1981 H.K. Townes (1♂ AEIC).

24. *Iucastigmus urqicus* Finnamore new species

Derivation of Name.—The name is derived the Quichuan *urqo*, meaning hill; and the Geerk *ikos*, meaning belonging to, in reference to the type locality in the hilly country of Minas Gerais, Brasil.

Diagnosis.—This species is one of those with a reduced median scutal groove that is confined to the posterior part of the scutum and does not reach the admedian lines. Unlike other species with a reduced scutal groove it has a white, toothed pronotal lobe in the male, and, in the female a toothed, brown pronotal lobe, black mesosoma, and the absence of lateral clypeal teeth. Although this species is known from only 2 specimens and might appear to be conspecific with either *chiucha* or *mauracis*, the lack of a lateral tooth on the female clypeal margin is a substantial difference from either of those species.

Male.—Length 3.5 mm. **HEAD.** Flagellomeres without tyli or specialized setae; flagellomere I length $1.7 \times$ apical width; flagellomere X length $1.6 \times$ apical width; flagellomere XI straight, cylindrical, apex conical. Clypeus obscured by dense appressed setae which extend up frons along inner margins of eyes to approximately twice the height of antennal socket. Frons uniformly microsculptured with punctures obscure; vertex more shiny, weakly microsculptured, punctures sparse, 3 or more diameters apart; gena microsculptured, more strongly so than vertex; genal punctures sparse, obscure; gena without ventral tooth or swelling; micropore field present as a small, oval patch between compound eye and lateral ocellus, without depression behind it; lateral ocelli closer to each other than to compound eyes. OOD $1.6 \times$ LOD. **MESOSOMA.** Transverse pronotal carina forming a right angle at humeral angle and toothed or produced ventrally, transverse pronotal groove with longitudinal striae; pronotal lobe weakly toothed, with weak anterior carina; lateral

pronotal area with several longitudinal striae. Scutum microsculptured anteriorly, posterior half more shiny, with weak microsculpture, and with strong punctures that are about 2 diameters apart; notauli present anteriorly, attenuated posteriorly near scutal midlength; median scutal groove present posteriorly, attenuated near scutal midlength and not reaching admedian lines; posterior scutal margin with a series of short ridges parallel to median groove. Scutellum weakly microsculptured, with several obscure median punctures and a longitudinal sulcus. Pre-aular area with sculpture plainly visible and setae obscure. Mesopleuron with hypersternaulus, scrobal sulcus, and omaulus coarsely foveolate; mesopleuron otherwise shiny and microsculpture weak, mostly impunctate. Metapleuron dull, microsculptured with several irregular longitudinal ridges. Propodeum dull, microsculptured over most of surface and coarsely areolate; propodeal enclosure not differentiated from lateral spheres; basolateral propodeal area adjacent to metapleuron shiny, unsculptured. METASOMA. Tergum 1 shiny, without microsculpture; tergal punctures small, obscure, not readily evident; sterna shiny, microsculpture weak and punctures sparse, not increasing in density towards posterior sterna. COLOR. Black. White: palpi, and pronotal lobe. Yellow-brown: mandible, except apex; antenna, except flagellomere XI; tegula; fore leg; mid leg; hind trochanter, hind tibia and hind tarsus.

Female.—Length 5 mm. Similar to male except as follows: flagellomere I length $1.8 \times$ apical width; clypeus shiny, setae and punctures sparse, the latter about 2 diameters apart medially; median clypeal lobe with 2 teeth separated by a narrow U-shaped emargination, long setae arise from subapical pit on each tooth; apical clypeal margin without lateral teeth. Frons along inner eye margin not obscured by appressed setae; punctures of vertex and gena stronger than those of male, 2 or

more diameters apart. OOD $2.2 \times$ LOD. Scutum with some tendency toward ridged, striatopunctate sculpture anterolaterally, posteriorly, and medially. Color as in male, except pronotal lobes brown.

Material Examined.—1 ♂, 1 ♀. HOLOTYPE FEMALE: Brazil: Serra do Caraca, S. Barbara, M. Ger. 1600m II-1969 F.M. Oliveira (AEIC). Paratype: BRAZIL: Bahia: Itabuna CEPEC XI-1978 F.P. Benton, Mucuri (1♂ BMNH).

25. *Iucastigmus zephyrus* Finnamore new species

Derivation of Name.—The name is derived from the Latin *Zephyrus*, meaning a west wind.

Diagnosis.—The reduction of the median scutal groove to an elongate pit on the posterior scutal margin, yellow to red pronotal lobe, and the pronotum with a tooth on the transverse carina at the humeral angle that is larger than the tooth on the vertical carina, suffice to distinguish males and females of this species. In addition, the female is distinguished from the similar *mystaxalbus*, by its black clypeus (*mystaxalbus* has the apical third of its clypeus white and the transverse pronotal carina slightly obtuse at the humeral angle).

Male.—Length 3.5–4.0 mm. HEAD. Flagellomeres without tyli or specialized setae; flagellomere I length $1.56 \times$ apical width; flagellomere X length $1.3 \times$ apical width; flagellomere XI straight, cylindrical, apex conical. Clypeus obscured by dense appressed setae that extend up frons along inner eye margin to about half height of scape. Frons uniformly microsculptured without punctures except on upper area; vertex more shiny, weakly microsculptured, with punctures small and sparse, 3–5 diameters apart. Genal microsculpture and punctation similar to that of vertex; gena without ventral tooth or swelling. Micropore field a small diffuse circle between lateral ocellus and compound eye, without depression behind it.

Lateral ocelli closer to each other than to compound eye; OOD $1.6 \times$ LOD. MESOSOMA. Transverse pronotal carina toothed at humeral angle and with a smaller, ventral blunt tooth; transverse pronotal groove longitudinally striate; pronotal lobe rounded; lateral pronotal area longitudinally striate. Scutum microsculptured with punctures 3 or more diameters apart; notauli attenuated near anterior third of scutum; median scutal groove reduced to an elongate pit on posterior scutal margin, the latter with several short, evanescent, longitudinal ridges on each side of the midline. Scutellum weakly microsculptured on anterior $2/3$ and with several mediolateral punctures. Preomalar area with sculpture plainly visible and setae absent. Mesopleuron with hypersternaulus, scrobal sulcus, and omaulus coarsely foveolate; mesopleuron obscurely punctate, otherwise shiny with weak microsculpture. Metapleuron dull, microsculptured, and without ridges. Propodeum shiny and coarsely areolate, enclosure not differentiated from lateral spheres, basolateral propodeal area adjacent to metapleuron shiny with irregular microstriae. METASOMA. Tergum I shiny, without microsculpture; tergal punctures sparse, irregular, a few to many diameters apart and increasing in strength on more posterior terga. Sterna shiny, microsculpture weak; sternal punctures of similar density on sterna beyond S2. COLOR. Black. White: palpi. Yellow-brown: mandible, except apex and base; antenna ventrally; pronotal lobe; tegula; fore trochanter; fore femur on base and apex, sometimes entirely; fore tibia and fore tarsus; mid trochanter; sometimes mid femur; mid tibia and mid tarsus; hind tibial base and apex, sometimes entirely; hind tarsus; metasomal tergum VII and sterna VI and VIII.

Female.—Length 3.5–4 mm. Similar to male except as follows: flagellomere I length $2 \times$ apical width; clypeus shiny, setae and punctures sparse, the latter about 2 diameters apart medially; median clyp-

eal lobe with 2 teeth separated by a weak emargination, long setae arise from subapical pit on each tooth; apical clypeal margin without lateral teeth; frons along inner eye margin not obscured by appressed setae; upper frons, vertex and gena sometimes shiny, without microsculpture; OOD $2.25 \times$ LOD; scutum sometimes shiny posteriorly and punctures stronger than in male; color as in male but legs generally darker (femora and tibiae often black) and in light forms parts of the pronotum, scutum, scutellum, and mesopleuron may be red-brown.

Material Examined.—5♂, 7♀. HOLOTYPE MALE: Guatemala: Jalapa 3km S. Jalapa, 12-13-IX-1987, 1300m Sharkey (CNCI). Paratypes: **COSTA RICA: Puntarenas**: San Vito, Las Alturas 1500m VIII-1991 Hanson & Godoy (1♀ MUCR). **San José**: Escazú 20-V-1987 H. & M. Townes (1♂ AEIC). **GUATEMALA: Chimaltenango**: Yepocapa 1-V-1948 H.T. Dalmat (1♀ USNM). **Jalapa**: 3km S. Jalapa 12-IX-1987 M. Sharkey 1400m (1♀ CNCI); 12-13-IX-1987 M. Sharkey 1300m (1♀ CNCI). **Sacatepequez**: Antigua X-1965 NLH Krauss (1♀ USNM); 30-V-1973 (2♂ PMAE). **MEXICO: Quintana Roo**: [Kohuniich Ruins] 30 mi E. [Chetmal] 15-VII-1983 R. Anderson, mix. cohune palm for. 350 ft. (1♀ PMAE). **NICARAGUA**: [Santo Maria de Ostuma] XI-1959 NLH Krauss (1♂ USNM). **PANAMA: Chiriqui**: Volcan 1-3-VI-1983 Mt, 1470m P.J. Spangler, R.A. Faitoute, W.E. Steiner (1♀ USNM).

LITERATURE CITED

- Ashmead, W.H. 1900. Report upon the aculeate Hymenoptera of the islands of St.Vincent and Grenada, with additions to the parasitic Hymenoptera and a list of the described Hymenoptera of the West Indies. *Transactions of the Entomological Society of London* 1900: 207–367.
- Bohart, R.M. and A.S. Menke. 1976. *Sphecid wasps of the world, a generic revision*. University of California Press, Berkeley, 695 pp.
- Finnamore, A.T. 1995. Revision of the world genera of the subtribe Stigmina (Hymenoptera: Apoidea: Sphecidae: Pemphredoninae), Part 1. *Journal of Hymenoptera Research* 4:204–284.

- Fox, W.J. 1897. Contributions to a knowledge of the Hymenoptera of Brazil, No. 3. Sphegidae (*Sens. Lat.*). *Proceedings of the Academy of Natural Sciences of Philadelphia* 373–388.
- Gittins, A.R. 1969. Revision of the Nearctic Psenini (Hymenoptera: Sphecidae) I. Redescriptions and keys to the genera and subgenera. *Transactions of the American Entomological Society* 95:49–76.
- Kohl, F.F. 1890. Zur Kenntniss der Pemphredonen. *Annalen des k. k. naturhistorischen Hofmuseums Wien* 5:49–65.
- Melo, G.A.R. 1999. Phylogenetic relationships and classification of the major lineages of Apoidea (Hymenoptera), with emphasis on the crabronid wasps. *Scientific Papers, Natural History Museum, The University of Kansas* 14:1–55.